SEPTEMBER 1961

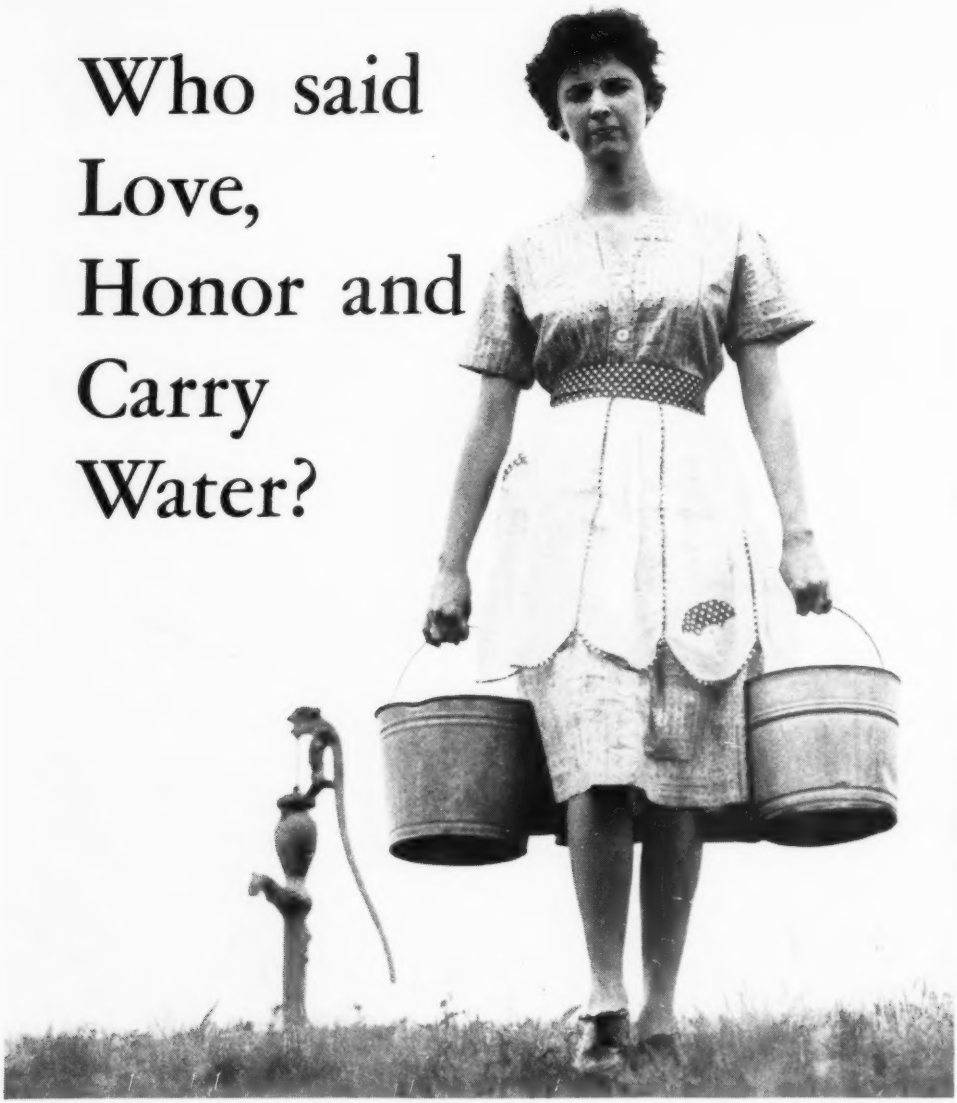
EOF electricity on the farm

SOUTHEAST EDITION

LIBRARY

Light your farmstead every inch of the way—for profit, pleasure and safety. *See pgs. 3 & 4.*

Who said Love, Honor and Carry Water?



Who wants to carry water? *You don't have to pump and carry water, or rely on an out-dated electric pump that gives only half the water you need. A modern Myers OLYMPIAN Pump carries the water for you. Puts it where you want it, quickly, quietly, economically. See your Authorized Myers Pump Dealer, today. He'll engineer a water supply system tailored exactly to your needs.*

Myers

The F. E. Myers & Bro. Co.
ASHLAND, OHIO KITCHENER, ONTARIO

CONTENTS

Light Every Inch of the Way..... 4
Batch Crop Driers..... 7
How to Maintain Stored Grain Quality. 8
He Planned for Automation.....10
How to Avoid a Power Bottleneck.....12
Preventive Pump Maintenance.....16
How to Make a Machinery Guard.....18
Pumps Keep Nursery 'Lifeblood' Flowing 26
Hens Get Meals 'a la Cart'.....28
Curing Yams for Off-Season Market...30
Mystery of the Lights.....32
Fewer Cracked Eggs.....34

the farm home . . . . . .

Planning a New Bathroom.....19
A Variety of Sandwiches.....23

regular features . . . . . .

Research Notes 15
Patterns 24
Duffy's Cavern 31
Questions and Answers.....33

SOUTHEAST EDITION

electricity on the farm

SEPTEMBER 1961
VOL. 34, NO. 7

A Reuben H. Donnelley Publication

HUGH J. HANSEN, *Editorial Director*
ALBERT MORRIS, JR., *Southeast Editor*
ROBERT NICHOLS, *Southwest Editor*
RUTH GAFFNEY, *Home Editor*
A. J. RADWIN, *Assistant to the Editor*
R. A. NELSON, *Presentation Editor*

K. H. GORHAM, *Publisher*
C. J. SCHWARTZ, *General Sales Mgr.*
G. B. PARKER, *Midwest Sales Mgr.*

Published monthly except combination issues January-February and July-August by Magazine Publishing Division, The Reuben H. Donnelley Corp., 466 Lexington Ave., New York 17, N. Y. Edward B. Wintersteen, executive manager; George W. Hutchings, division regional manager—Midwest; John Mileham, division controller; Thomas J. Hanly, division business manager.

Curtiss E. Frank, Chairman of the Board; Hamilton B. Mitchell, President; Edward A. O'Rorke, Vice President; Fred C. Ash, Secretary-Treasurer and General Counsel; Karl G. Clement, Controller.

Branch Offices—59 E. Van Buren St., Chicago 5, Ill.; Fidelity Union Life Bldg., Dallas 1, Tex.; 2535 Layton Drive, Lithonia, Ga.

Copyrighted 1961 by the Reuben H. Donnelley Corp. Not to be reprinted without permission. Title registered in U.S. Patent Office.

Subscription rates: $1.25 per year; $2.00 for 2 years; $3.00 for 4 years. 15¢ per copy. Bulk rates on request. Accepted as controlled circulation publication at Chicago, Illinois.

POSTMASTER: Send changes of address (Form 3579) to Electricity on the Farm, 466 Lexington Ave., New York 17, N. Y.

Live and Work in Light

It's been said: *"Animal works from sun to sun, but man works until the job gets done."* There's a lot of truth in this statement, especially for farm folks.

Let's think for a moment about your day. I'll wager most of you are awake 15 to 17 hours out of every 24, whether it's winter or summer. In midsummer we need extra light only a short period in the evening. In midwinter we use lights from the time we arise until sunrise and again in the evening from sunset until bedtime. Although there may be only 8 or 9 hours of sunshine, we are still active our normal 15 to 17-hour day.

But with farm animals it's different. We subject them to a workday that changes in length from season to season. Their December workday is only about half as long as their June workday. We might argue that Nature intended it that way. But we have altered Nature's environment for our animal in almost every other respect. Our animals are, in reality, "production factories" for the farm operation. As such, it makes sense that these "factories" work at utmost capacity year-round, because we always desire maximum production. It's already being done very successfully with poultry.

Many farmers have reported to us that leaving some lights on in their dairy barn has increased milk production. It doesn't take much extra milk to offset the cost of operating a few lights all night. Beef and hog raisers find that when they leave lights on, animals eat more. Since these "factories" are in business to put on weight, it's desirable that they eat as much as possible around-the-clock.

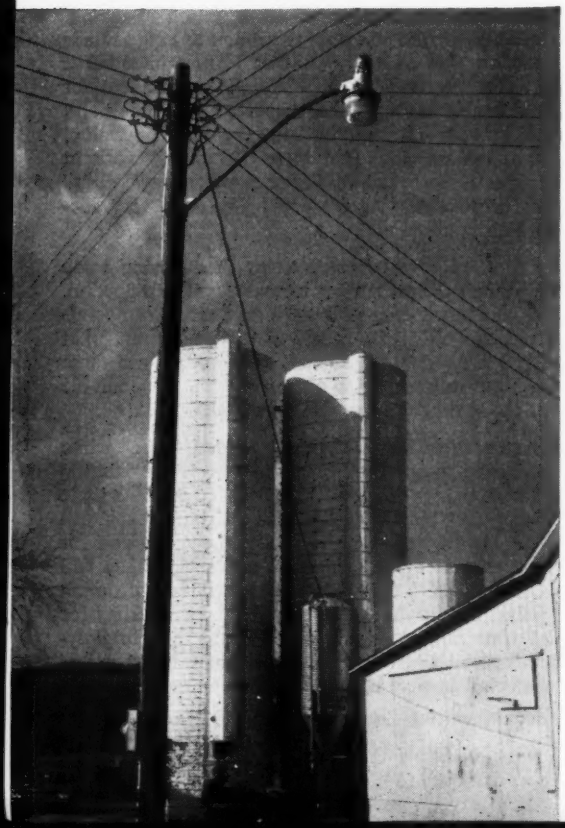
Our city cousins have long ago created "great white ways" to make their streets pleasanter and safer during sunless hours. Now the same thing can and is being done on the farm. Automatic dusk-to-dawn lighting units will make your farm a "great white spot" on our horizon for just a few cents a night. Placed in a feed lot, they will allow your animals to feed around-the-clock for maximum weight gains. And think of the convenience and safety for you and your family. You'll come home to a brightly-lighted farmstead where you can find your way around as easily as during daylight hours. Don't live in the dark again this winter.

HUGH J. HANSEN

Brightly-illuminated farmstead is safe, convenient for after-dark work, and pleasant to come home to. Automatic controls assure that lights go on whether you're home or away, discouraging prowlers.

Light Your Farm Every Inch of the Way

Streetlamp-type fixtures with built-in photocell are available on rental or purchase basis from many power suppliers.

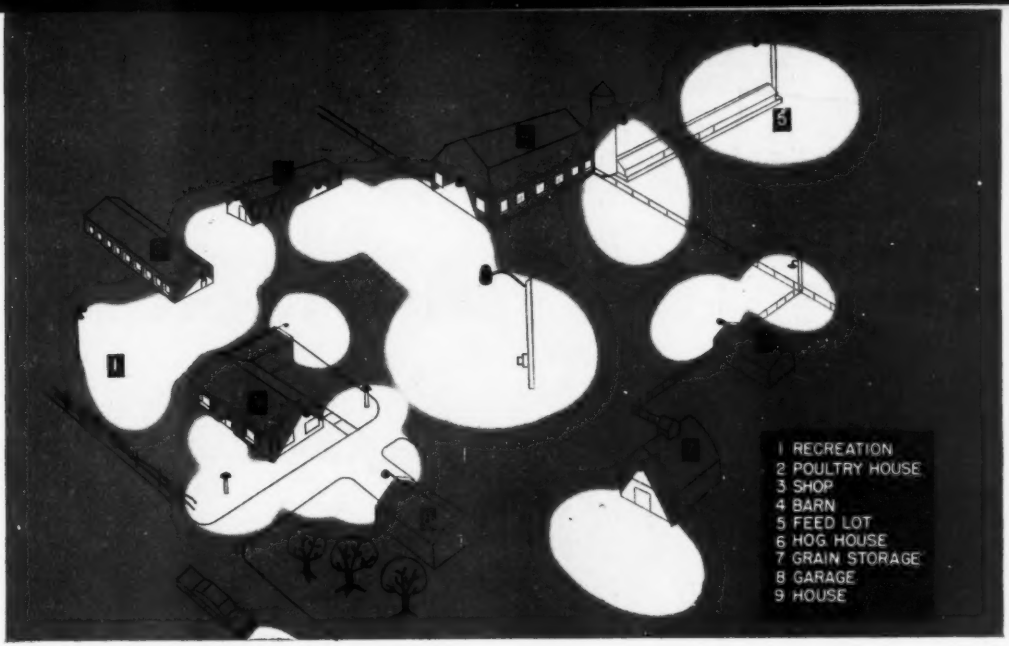


One yard light alone cannot be expected to illuminate today's farm yard any more than one light can take care of today's home. Lighting units should be selected and installed to give the type and amount of light needed and at a place where they will do the most good. The illustration on the opposite page gives some suggested locations for various types of lights. None of these except the post yard light should be mounted less than 15 feet from the ground to do the best lighting job.

City street lights have long been on automatic control—turning on at dusk and off at dawn. This is also now becoming the preferred method of controlling farmstead and yard lights.

Two different basic methods of automatic control are available—the photoelectric switch **(1)**, and the time clock control **(2)**. Both are shown at the right. The photoelectric switch senses light or lack of same. It will turn the lights on when outdoor lighting gets down to some preset low value such as five to one footcandles. The light then remains on until natural light of about ten footcandles is available, when they turn off. Moonlight is not bright enough to turn them off. A time-delay mechanism of 30 to 60 seconds prevents their working should an automobile light or lightning flash across the sensing element.

Photoelectric controls must be mounted so light does not shine directly on sensing element. They can be remotely located, but more often are a part of the light assembly, being mounted either above the lamp **(3)**, in the post **(4)**, or in the mounting box for bracket lights.

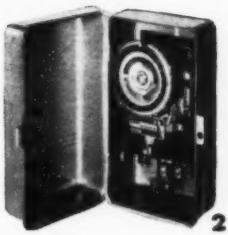


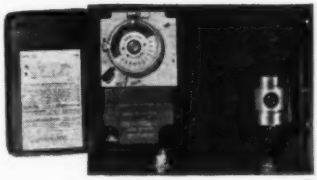
The time clock operates by preset hours. It can be set to turn lights on at 7 p.m. and off at 6 a.m., if those are the hours of darkness. It is a very simple task to reset this unit to correspond with day-length changes.

Photoelectric cells are used in series with time clocks for some installations as shown at right **(5)**. Here the time clock controls the hours during which light or darkness is desired. The photocell turns lights on when dark periods occur during these hours. For example, if light is desired from dusk to midnight and from 5:30 to dawn, the clock would be set to turn off at midnight and on at 5:30 a.m. The photoelectric control would turn lights on whenever dusk occurred and off at dawn if it came after 5:30.

Either photoelectric or time clock control units can usually be obtained for less than $25. By mounting at or near the light, wiring is simple. Existing lights can easily be converted by replacing present manual switches with either automatic unit. □□

1


2


5

3

4

1. Photoelectric switch
2. Time Clock Control
3. Photocell mounted on lamp
4. Photocell in post lamp
5. Time clock-photocell in series

Never Before So Many Useful Range Features At So Low A Price ...With The Most Useful One Of All...

Kelvinator Ends Oven Cleaning Drudgery Forever!

Kelvinator Electric Ranges Available in Both 30" and 40" Sizes

30" size, Model KR-35 above, has full-width oven and storage drawer, 40" size, Model KR-45, features full-size oven with storage compartment and drawer.

No Messy Scouring, Scraping or Scrubbing!

This isn't just "easier" oven cleaning . . . it's no oven cleaning drudgery at all!

You don't pull the Kelvinator oven apart, lift off the door or climb inside to clean it. Instead, Throw-Away Aluminum Oven Linings catch spatters and spill-overs to eliminate all scouring, scraping and scrubbing.

When linings become soiled, you just whisk them out, slip in new ones and presto, a clean oven! For replacements, you use standard 18"-wide foil available at stores everywhere!

ONLY KELVINATOR GIVES YOU ALL THESE HIGH-PRICED RANGE FEATURES FOR $30 TO $50 LESS THAN YOU'D EXPECT TO PAY!

- **AUTOMATIC OVEN TIMER AND CLOCK** starts and stops oven automatically!
- **MINUTE MINDER** sets for one to 60 minutes, rings when time is up!
- **INFINITE HEAT CONTROL** on right front unit dials any temperature!
- **EXCLUSIVE "EVEN-HEAT-FLOW" OVEN** has Automatic Top Oven Unit!
- **ADJUSTABLE-HEAT, ONE-POSITION BROILER** eliminates raising and lowering of grille!
- **TIMED APPLIANCE OUTLET** for automatic or regular use!
- **FINGER-WIDE PUSH-BUTTON CONTROLS** for three surface units!
- **REMOVABLE ALUMINUM DRIP PANS** for each surface unit!

Here's Why Kelvinator Brings You So Much Value!

Kelvinator doesn't waste money making costly annual model changes —mere "change for change's sake." Instead, Kelvinator concentrates on making appliances more useful, more dependable, and more economical to operate. Just as soon as improvements are tested and approved they are introduced. Because of this policy of Constant Basic Improvement, you are always sure of the newest with Kelvinator.

SEE THESE FLAMELESS ***Kelvinator*** RANGES TODAY!

BATCH DRIERS . . . Fast Way to Condition Grain Crops

Drying system, which Powers says could be duplicated for $7500, includes 1500-bushel bin for wet grain, a second bin for dried products, and conveyors to make handling entirely mechanical. Flow pattern is from hopper behind drier where trucks unload, into holding bin at right, thence into the drier, on to the dry bin, and finally into trucks.

Ralph Powers trucked 7200 bushels of 28% moisture corn to market. Offered $1 per bushel for it, he hauled it back home, ran it through a batch drier to bring the moisture down to 15%, then sold the grain for $9,008.80.

The additional return of 25 cents per bushel for his trouble convinced the Moyock, North Carolina, man that there is money to be made by crop drying. In three years of using a batch drier, he has processed between 60 and 70 thousand bushels of grain at a cost of less than three cents per bushel. That cost includes depreciation. The drying system, which would require roughly $7500 to duplicate, already has paid for itself, Powers says.

Wet Bin Eliminated Bottleneck

It includes two 1500 bushel bins, one for wet grain and the other for dried products. Augers are used to make grain handling entirely mechanical after it is dumped into a hopper at the drying installation. New in Powers' system last year was the bin for wet grain. He had been augering directly from the hopper into the drier, but he found this tied up his trucks and slowed the harvest schedule. Wet grain that is binned during daylight hours can be dried at night.

If the 1500-bushel bin for dried grain is filled, Powers has a second auger from the drier that carries grain into a building where he is equipped to store 4500 bushels. Next thing he wants is about 12,000 bushels more storage.

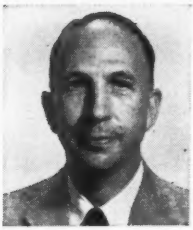
Aerates Stored Grain

The 330-bushel drier has been used primarily for corn. Powers operates it with air temperature up to 180° F., but his chief aim is to keep the temperature of the grain below 120° F. This is to prevent damage to the grain from overheating. Under normal conditions, he can handle and dry a load of grain in 3 to 3½ hours. The drier fan has a 10 hp motor. (See photo, Pg. 18)

In the 16 x 32 foot building which provides his 4500 bushels of storage, Powers piles dried corn 11½ feet deep on a concrete floor. He aerates regularly to maintain condition of the corn. A 12-inch perforated tube is extended 24 feet along floor. The fan used for aerating is a 1 hp unit with rated capacity of 1510 cfm. Powers operates it during the middle of the day, 4 to 6 hours, when he has optimum conditions for aerating. □ □

EOF asks Joe W. Simons,
crop-drying and storage authority...

How Can Quality of Stored Grain be Maintained?



J. W. Simons is now Leade of Farm Housing Investigations, AER Division, ARS, USDA, stationed at the University of Georgia, Athens.

Q. What can be done to maintain the quality of stored grain?

A. First, I would say that the grain should be at a safe storage moisture content. For most grains, this would be 11 to 12% in the Southeast and 13% for the grain-producing areas of the Midwest. For short periods of storage, say a few weeks, you can easily get by with 1% more moisture.

Q. Are there other precautions for guarding the quality of stored grain?

A. Definitely. A good storage facility is important. It must protect against rain, snow, rats and birds. Regular inspections are necessary. If a farmer is storing much grain, I would recommend he buy a probe to be sure he gets satisfactory samples. A nearby grain elevator or the county ASC office may have a moisture tester where he can have his samples tested, if he cannot afford his own testing unit.

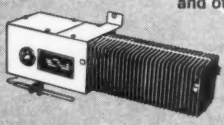
Q. What about fumigation?

A. By all means, fumigate at the first indication of live insects. Another way the probe or a steel rod can be used to detect trouble is to insert it into the grain, leave it in place for 10 minutes or longer, and then feel the different sections of it when it is removed to see whether there is significant difference in temperature. If temperature varies significantly, you have a moisture problem and possibly an insect problem, too.

Q. What can be done about excessive moisture content?

A. There are several things that might be done. If there is a crop drier connected to the storage, the fan can be used to force natural air through the grain and remove the moisture. If the materials handling system permits it, the

today's progressive farmer knows... he can "Farm Better Electrically" ...and HEAT SAFELY* with Electromode Flameless HEAT



Illustrated are only a few of the many Electromode units that bring more comfort, convenience, efficiency and profit to modern farming. There are other Electromode units ideally suited to perform many heating chores all around the farm—tasks that only electrical heating can do with maximum effectiveness, minimum attendance and maintenance.

*SAFETY — Electromode heaters have an exclusive built-in Safety Grid. All heating elements are buried in cast aluminum, giving you 100% protection against fire, shock or burn.

PORTABLE HEATERS:
The ideal multi-purpose heaters all around the farm. Especially useful for Milk House, Milking Parlor, Storage Bins. They're the farmer's prime safeguard against water pipe freezing, ensuring vitally needed running water all winter long.

UTILITY HEATERS:
Especially designed for Pump House and other remote locations where above-freezing temperatures must be maintained, but where inspection and attention may be infrequent. A built-in thermostat maintains the desired pre-set temperature.

HEATING MATS:
For Brood Pens, Milk House Floors, Ramps, Driveways. Pays for itself many times over in livestock pens when turned on during and just after farrowing. Keeps temperatures just right for young livestock survival. More livestock reach the market. More profits for the farmer.

grain might be turned or moved. Or, if moisture content has not gotten too high, a small aeration system might be the answer.

Q. How is aeration different from drying?

A. Aeration is forcing small volumes of air (1 cfm or less per bushel) through stored grain to cool it and prevent moisture migration which may cause spoilage or loss of quality. In drying, a much larger volume of air is required and the primary objective is to remove moisture. You see, there is moisture in grain, and even if the grain is dried to a safe moisture level we can still have this moisture problem in storage. Outside temperatures change, and as they do we have moisture migration in the grain. As temperatures drop, moisture migrates from the center of a mass of grain to the outside because of a vapor pressure difference between warm grain in the center and colder grain on the top and around the walls. Then too, since the center is warm and the outside cold, convection currents are generated and moisture moves with these currents from inside to the top a little faster than in other directions. When moisture strikes the cold top surface, it condenses out and sets up a favorable condition for mold. Thus, the first evidence of spoilage we see usually is mold on top of the grain.

Q. Can one of these small aeration systems be installed in a filled bin?

A. Yes. You can buy complete systems, ready to install, that have a pipe which is inserted downward in the center of the bin of grain. The fan connects at the top of this pipe and has a discharge duct which exhausts air outside the bin. This aeration system pulls air from the top down through the grain and discharges it outside. Units like this that move $\frac{1}{10}$ to $\frac{1}{25}$ cfm of air per bushel have given very satisfactory results. Initial cost and operating expense are low. As to installation, however, it is better to plan ahead and put in the aeration system before the bin is filled.

Q. How can the farmer know when he has aerated long enough?

A. He may measure the temperature of the exhaust air. If it is about the same as outside air temperature, he has done all of the good that he can until there is further drop in outside temperatures.

Q. How often should one expect to aerate?

A. Barring unusual weather, I should think one could follow a plan of aerating every two weeks during winter and he would be reasonably safe. Probably a half-day would be sufficient. Of course, he should be careful to choose a time for aeration when the air is cool and the humidity is not too high. Where aeration is done with the same fan used for crop drying, the volume of air will be larger and the time required will be shorter. Anytime there is a sharp drop in the mean daily temperature, it is a good idea to aerate at the first opportunity. □□

Everywhere on the farm and in the farmhouse you'll find multitudes of ways Electromode will lead to better modern living. For complete details and literature see your nearest Electromode dealer or write to:

for the farmhouse, too!

Farm living has certainly changed. Today, the modern farm or rural wife wants and deserves all the electrical conveniences her city friends enjoy—including the safe, comfortable, controlled, even-flow heating that Electromode provides. Clean and odorless Electromode heating makes a world of difference in the farm home.

LOW-LEVEL BASEBOARD HEATERS

The most convenient, effective, modern type heating available for any home. Electromode perimeter heating provides the comfort of radiant warmth along outer walls, under windows and across floors. Conveniently and economically controlled by individual room thermostats. Customized, matching fittings permit a pleasing baseboard effect in any size or shape room.

No expensive ducts or pipes are needed. It saves space. It eliminates fuel dirt and dust—and all the painstaking work needed to clean it off walls, curtains and upholstery. Farm mothers have little enough time as it is. Electromode heating relieves them to spend more time with their growing children.

®Electromode

DIVISION OF COMMERCIAL CONTROLS CORPORATION
DEPT. EF-61 ROCHESTER 3, NEW YORK

Mistr's grain storage, feed processing and poultry installations are compactly arranged for automation. Moving grain from bins and delivering it to layers as processed ration is a push-button operation.

This poultry farmer had foresight...

He planned for automation

If A. S. Mistr has a motto, it might well be: "Let machines do the work!"

Grain drying and storage, feed processing and poultry installations on his farm near Richmond, Virginia, are located to form a compact system in which grain is moved mechanically from storage, processed into feed and delivered to 5000 layers. In terms of human effort, all that is required to accomplish this is pushing buttons and opening gates which control flow of grain from the different bins.

No old buildings are involved in the system. It is new from the ground up. The whole thing started with an automated laying house that has been in use almost two years. It is 36 x 192 feet, has a slatted floor and mechanical pit cleaner, is equipped with automatic feeders and ventilating fans. At approximately 1.2 square feet per hen, it has capacity of 5000 birds. A 22 x 36-ft. section at one end of the house is used for processing and refrigerated storage of eggs.

Idea Came from VPI

Mistr says he got the idea for his poultry house from Virginia Polytechnic Institute. Basically, it is a pole-type structure with 5 inches of blown insulation in the ceiling and insulation in the outside walls, too. The slatted floor, which extends the length of the house, is 16 feet wide. Feed troughs and waterers are located on the slatted floor. The pit cleaner is operated about 25 minutes on alternate days to remove waste.

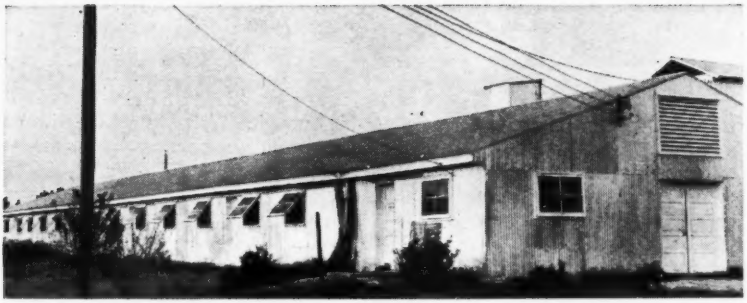
"The house is clean and it is dry," observes Mistr. "This is one of the things we like about it."

His ventilation system is unique. In winter he circulates air from the outside through the attic before it flows into and across the building. This utilizes heat that collects in the attic area. Lowest temperature recorded inside the house last winter was 49°, Mistr says.

6 Fans for Ventilation

Six ⅙ hp fans with automatic controls are mounted in the wall along one side of the building to give the desired air movement. They operate at regular intervals to give changes of air, removing moisture and odors in the process.

Mistr says the first group of layers he had in the house did not peak as high as some of his flocks have, but their production held up for a longer period. Divided into pens of 1200, the birds get a standard 14-hour day throughout the laying period.



Laying house, in addition to housing 5000 birds, also houses egg washing and grading equipment and a refrigerated storage room.

Six ⅓ hp fans like this are key to ventilation system that Mistr says keep the house dry, kept inside temperature above 49° throughout first winter house was used. Operation of fans is automatic.

Inside house, birds are divided into four pens. 16-foot width of raised slatted floor permits use of pit cleaner for removing waste. Mechanical feeder and automatic waterers are located on the slatted floor.

Only thing about the automated house that did not work to Mistr's satisfaction was an egg collection belt. And this did not appear to be the fault of the equipment. That first group of hens never learned to use the nests that were provided for them.

One possible change that Mistr pondered was whether to reduce the size of his laying flock. Allow as much as 1.5 square feet per bird, he was thinking. He wondered whether the hens need more room for eating and drinking.

Materials Handling System

Three bins located in a straight line are used for drying and storing grain produced on Mistr's farm. Two of the bins hold 1660 bushels; the third has 3340-bushel capacity. A 54-ft. auger extends beneath the floors and through two of the bins to reach the third. It is a 3-inch auger operating in a 4-inch tube, and by opening or closing gates in the floors of the bins it can be used for moving grain from either bin to the feed processing center. Slide gates in the bottoms of the bins are controlled with rods which extend to the outside of the bin.

A 1 hp continuous-duty electric motor drives the horizontal auger. When grain gets to the feed processing center, it is lifted into 3½-ton hoppers by a vertical auger driven by a ⅓ hp motor. Then it flows by gravity to the 2 hp mixer-grinder, an automatic unit which can be set to blend different rations, to operate for specific time intervals, and which has self-contained controls to stop it if the supply of an ingredient is used up or anything else goes wrong. Thus, it does not require an attendant while it is operating.

Processed laying rations are augered directly from the ground-level mill into a hopper above the automatic feeder in the poultry house. Hog feed is diverted into a truck or trailer.

Mistr's is a farmstead that has been planned for automation, geared to using machines to get the job done more efficiently with less human effort. □□

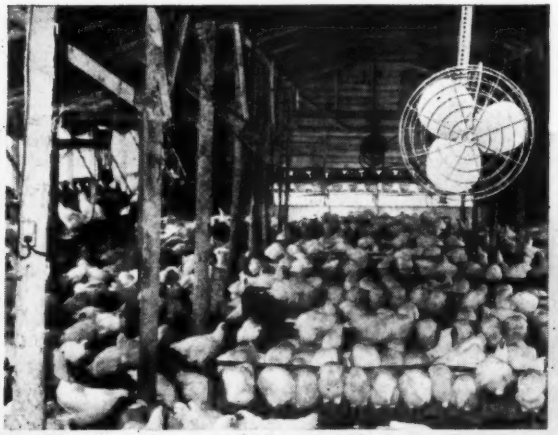
Two summers ago, Hoyt Oliver installed fan-fogging units in his laying houses. That move brought him face to face with the question of what to do about a farmstead wiring system that already had been outgrown, and now failed frequently because of overloading.

What happened to the Oakwood, Georgia, poultryman is occurring on a great number of farms, as more electrically-powered equipment is added. A shortage of electrical energy develops due to a power bottleneck. Two factors cause this. The service entrance switch may be too small and/or the distribution wires are not big enough. To try to get by with an overloaded system is inefficient and endangers the life of motors.

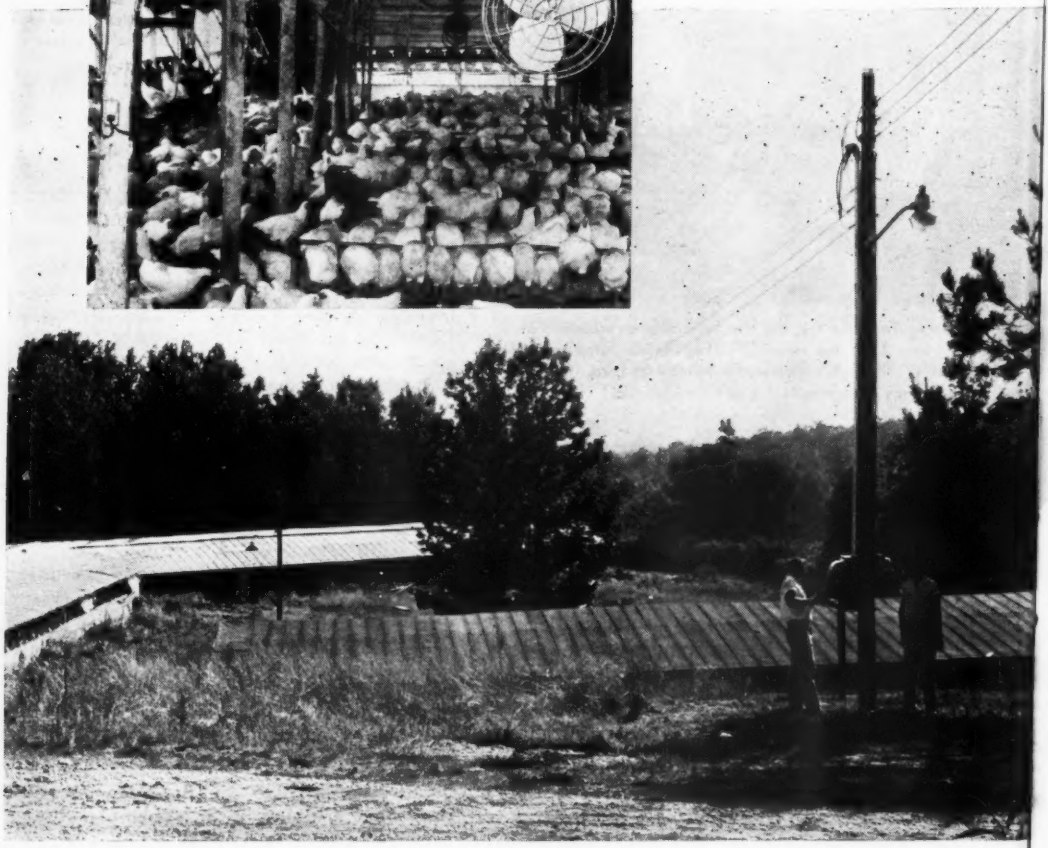
Look to the Future

With laying flocks totaling 6500 birds, Oliver took a serious look at his farming future. He anticipated expansion, the installation of mechanical feeders, the use of heating tapes to warm water for his layers, and artificial lighting in the poultry houses. These were moves he would have to make to continue in

Continued on page 14

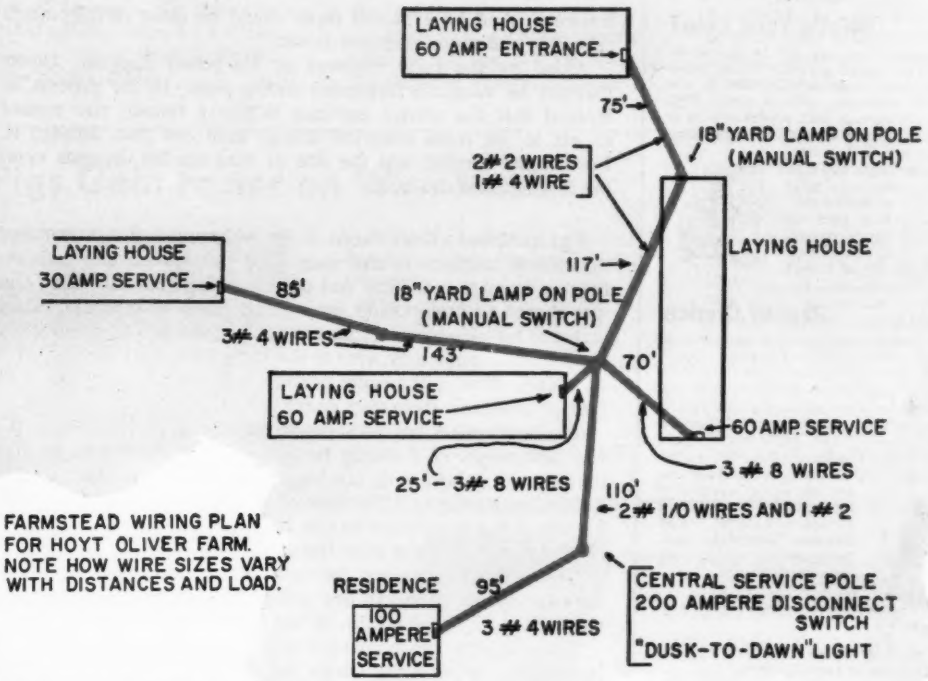


◀ **Fan-fogger installation in laying houses forced Oliver to do something about old wiring system. Fans were not operating properly because of overloaded system.**



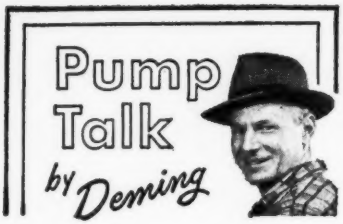
To improve his operation, poultryman Hoyt Oliver had to **BREAK HIS POWER BOTTLENECK**

By ALBERT MORRIS



FARMSTEAD WIRING PLAN FOR HOYT OLIVER FARM. NOTE HOW WIRE SIZES VARY WITH DISTANCES AND LOAD.

◀ New system has 200-ampere service entrance on central pole. Note the dusk-to-dawn light.



QUIZ TIME

Do you know how to estimate daily water needs?

For example, how many gallons per person per day should you figure? How many gallons per day for each horse? How about producing cows? Chickens? Your answers are—50 gallons per person; 12 gallons per day for each horse; 35 gallons for each producing cow with drinking cup. Each 100 chickens (cooped and lighted) will consume 9 gallons per day. Lots of water, and you have to plan for the proper water system to do the job.

What's Your Line?

Did you know that you are in the water business? Yes, you're actually selling water when you take your merchandise to the market. For example, milk is about 87% water. You'll increase milk production 10 to 20% if your cows can have all the water they need. Eggs are 65% water. You get larger eggs and 8 to 10% more production if your hens have lots of clean water. Meat production goes up 10 to 20% if your livestock have plenty of water. Yes, sir, you need *lots* of water!

Proper Choice

Whether you're putting in a new water system or just enlarging your old one—you'll profit by professional advice. Your DEMING pump dealer is the fellow who can save money for you, and help you make the installation an investment that will earn extra dollars for you in the years ahead. He'll know which DEMING pump to select for you. We've been making quality pumps for more than 80 years, and are proud to claim of having "The World's Most Complete Line of Water Systems." *Send in the coupon below, and we will send you complete information.*

FREE OFFER

Please send me your booklet on "How to Select Your Water System."

Name_____

Address_____

City_____ Zone____ State_____

The DEMING Co.

932 Broadway • Salem, Ohio

BREAK HIS POWER BOTTLENECK . . .

(Continued from page 13)

Vo-ag teacher learns by doing in farm workshop, readies himself to help farmers recognize and do something about power bottlenecks on their farms. 60-ampere switch has circuits for fans, lights, mechanical feeder. Fan circuits are used for water-warming heat tapes in winter.

business. And he expected there would be other developments requiring still more electrical power.

Aided by the rural engineer of his power supplier, Oliver mapped an adequate farmstead wiring plan. In the process he learned that the service entrance is like a funnel; you cannot expect to use more electrical energy than can pass through it. Further, he learned that the size of wire needed depends upon the distance and the load.

The problem Oliver faced is so widespread that vocational agriculture teachers in the state have put special emphasis on helping farmers recognize and do something about it. His farm was chosen as a workshop for a small group of teachers. They gathered for classroom sessions to analyze the situation and study the solution. Then they went to the farm for a work day, to learn by doing. This is the same procedure the teachers follow with farmer groups in their own communities.

The new system has 200-ampere service. It permits Oliver the full advantages of farming better electrically—advantages like the ones he gained with fan-foggers. For example, he had two houses, each holding 3250 birds of the same age. When he made his initial fan installation in one house, production ranged up to 200 eggs more per day than from the other house.

Oliver says he also sets the fans to blow on hens when blood tests are being made. In one test period, he lost 70 hens from smothering. Using the fans, he lost only two birds.

These experiences convinced him that fan-foggers are a good investment on his farm, where the laying houses are located on low ground and natural air circulation is not as good as it might be in other locations.

When adding new electrical equipment, it is a good idea to check with your power supplier to be sure that you have adequate service and wiring for the equipment to operate properly. This is especially true with major appliances or farm equipment with larger size motors. □ □

Research Notes

By J. P. SCHAENZER

The rate and extent of egg spoilage is increased by washing them in water with a high concentration of iron (5-10 parts per million in solution). —USDA

Iowa Holstein milk production records of 20,577 cows for three years show that those freshening in November, the highest month, produced 1231 lbs. of milk and 46 lbs. of butterfat more than those freshening in August, the lowest month.—BEN BERESKIN

A flash pasteurizer has been developed that will purify 600 gallons of farm pond, well, cistern or spring water per day by electrically heating it to 161° for 15 seconds. To pasteurize 1000 gallons takes 50 KWHrs. —U. S. PUBLIC HEALTH SERVICE, CINCINNATI, OHIO

Soybean acreage has increased in the U. S. from 1.5 million acres in 1925 to 26.4 million in 1961, and production from 5 million bushels to about 600 million.—USDA, GEORGE W. KROMER

Grain containing 18% and less moisture apparently can be dried in a solar-heated-air system with as little as 3.5 to 6.5 hours of daily sunshine, and with about half the electricity used for moving unheated air.—KANSAS STATE UNIV. & USDA, LIPPER AND DAVIS

Exposure to infrared light for 16 minutes inhibited germination of Great Lakes lettuce seed. — USDA, HARRY BORTHWICK

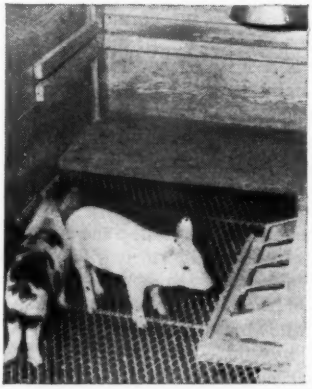
Install your separate electric oven so that the top side of the fully-opened door is between 1 and 7 inches below your elbow height.—CORNELL UNIV., ROSE E. STEIDL

Continuous incandescent lighting during the entire brooding and rearing period reduced egg production significantly as compared with lighting for 8 hours with 16 hours of darkness. — WASHINGTON STATE UNIV., W. E. MATSON AND J. V. SHUTZE

Sprinkler irrigation for frost protection has produced a spread of 17° between sprinkled and unsprinkled areas, using an application rate of 65 gallons per minute per acre.—UNIV. OF MASSACHUSETTS, J. S. NORTON

All types of cake held up to 4 weeks at 0°F. showed highly significant differences from freshly-baked, but their quality was still quite good and superior to day-old unfrozen cakes.—USDA, JAMES W. PENCE AND MARJORIE HEID

Pigs Gain Faster on Wire Mesh



A University of Illinois swine researcher reported recently that a series of 14 tests have shown that pigs raised on a steel mesh floor made 19.5% faster gains than pigs raised on concrete.

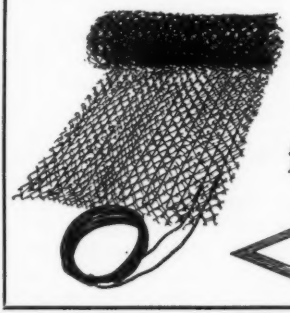
A. H. Jensen said that the test involved 728 pigs weaned at two to three weeks of age. All pigs, regardless of flooring, received the same rations and experimental treatment.

Feed required per pound of gain varied, and neither type of flooring affected it consistently.

Jensen observed that pigs on the steel-mesh floor showed no adverse effects from being on the mesh. Their feet and legs, in particular, showed no harmful effects. Pigs on steel mesh also stayed much cleaner than those on concrete.

The research men provided a wooden overlay as a sleeping area for pigs on the steel mesh. Pigs used the overlay except during hot weather, when they preferred the cooler mesh.

Workers cleaned the concrete floors daily. Cleaning of the concrete under the steel mesh varied from daily in hot weather to monthly during the winter. □□



SNO-PAD

Melts Snow and Ice—Electrically
In driveways, sidewalks and steps
Heats concrete in chicken brooding and pig farrowing areas.

Heavy Duty Plastic Mesh—
no metal—26 sizes—High Wattage—
50 w. per sq. ft. for extreme conditions.
Medium 35w—Low 15w for feeding and finishing farrowing pens.

Write for Free Actual Sample!

Raehco
Radiant Electric Heat Company
Centerville, Iowa

Don't Get Caught With Your 'Pumps Down'

Your best water supply insurance is . . .

Preventive Pump Maintenance

Margaret Green commented to her husband one night at the supper table that she wasn't getting as much water from the taps as she had only a week before.

Jim Green made a mental note to look into it the next day and promptly forgot about it.

A couple of weeks later, Margaret asked Jim if he had found anything wrong with the pump. Jim said he would check it first thing in the morning. His good intentions were thwarted by the excitement over the early morning delivery of a new litter of pigs.

Two months later, in the middle of washing down the milkhouse, the Green farm was suddenly without water.

Jim Green was lucky. The trouble was a leak in the suction line of the pump, and water service was restored in about two hours. A couple of quick trips to a neighbor provided Jim with several milk cans of water to take care of essential needs in the meantime. Reflecting back, Jim realized that the pump could easily have stopped in the middle of the night. Coupled with sickness in the family or an unexpected fire, he could have been in serious trouble . . . trouble which could have been prevented.

Prevent Trouble Before It Starts

"Preventive maintenance" is a term well known in American industry. It means locating possible sources of trouble in equipment through a periodic inspection program, and correcting a potential problem before it causes a breakdown or failure.

Many farmers today carry on a preventive maintenance program on farm equipment. The family car is a good example. The typical owner has the family car serviced regularly, checks at most gasoline stops to make sure the car is carrying enough water and oil, and gets a complete check-up once or twice a year. Any unusual engine knock or loud rattle is enough to send most car owners scurrying to the nearest garage . . . or at least under the car to find the difficulty himself. Most tractors and farm implements receive the same basic care and treatment.

Yet, it is shocking how little maintenance attention is given the average farm water system, despite the extreme importance of a dependable running water supply. If you think about the inconveniences, plus the possible health and safety hazards which may occur should the farm pump fail, this importance becomes pretty clear-cut.

Don't Wait 'til Too Late

Perhaps because the farm pump is installed usually in an out-of-the-way corner of the basement, a pit, or a well house where it isn't seen too often, it is forgotten . . . until the water stops running. Then, it's too late. Every day, water systems are replaced which have fallen far short of their expected life span because the owner didn't take the time to stop the trouble before it really started.

The rural family can save considerable money and trouble by following a few simple rules on "preventive maintenance." Besides adding years of life to a water system, these steps, if followed, can reduce service calls and assure a dependable 24-hour water supply.

1. When the system is properly selected and installed, service and maintenance costs can be held to a minimum. Previous articles in this series have detailed proper development of

water source, selection of right pump, and installation techniques. In addition to being correctly installed, your pump should be placed in an easily accessible place, to make inspection a simple routine.

Inspect System Regularly

2. It is well to inspect your water system at regular intervals, say every 30 days. Particular attention should be given to condition of oil, undue water leakage, unfamiliar noises and air supply in pressure tank.

3. Proper installation procedures should protect your pump from adverse weather conditions such as flooding or freezing. Even so, it is good policy to make an immediate inspection if unexpected freezing or flooding happens.

4. It is wise to ask your water system dealer or serviceman to make a periodic inspection of your water system. An annual inspection, like the yearly health checkup by the family doctor, may save you more serious trouble later on. Submersible pumps should require less attention because of built-in maintenance features.

5. Pressure tank should be drained occasionally, especially if your water supply has a high content of iron or turbidity. This rids tank of dirt and sediment accumulation similar to that deposited in the bottom of water heaters. It is possible, too, that some red water may be experienced due to an accumulation of rust in bottom of tank. Most pump installers provide a drain valve on discharge side of tank for periodic draining. Manufacturers' or dealers' instructions should be followed in draining.

6. Self-oiling pumps—oil should be changed at least once a year and pump casing filled with oil recommended by pump manufacturer. When pump is fitted with a stuffing box, it is important to check at frequent intervals. (Stuffing box nut should allow slight leakage, enough to show moisture on piston pump. This furnishes water lubrication for gland packing.)

Replace Worn Belts

7. Belt-driven pumps — belt should be checked at regular intervals and replaced when worn. This avoids belt breakage, which could cause motor to run for hours, should breakage occur at night or when family is away.

8. Motor lubrication—standard-brand motors for jet pumps are equipped with grease-lubricated ball bearings. Original grease is sufficient for about five years of normal service. After that time, motor should be opened by a qualified motor service agency for inspection, cleaning, removal of old grease and addition of fresh ball bearing lubricant. If motor was run more than 3 or 4 hours daily, or under other severe conditions, bearings should be lubricated every 2 or 3 years. Motors on reciprocating-type pumps have sleeve bearings with oil reservoirs and wool yarn wicking. Correct lubrication calls for adding, annually, 8 to 10 drops of a good grade of medium machine oil, such as SAE 10. Never over-lubricate.

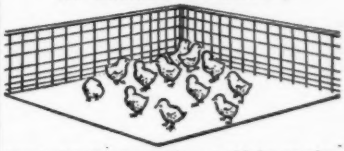
9. Pit installations—pit should be inspected frequently. Seepage or surface water should be prevented from entering pit. Excessive condensation can be avoided by proper ventilation.

10. In all cases, manufacturer's recommendations for maintenance and service should be followed to the letter.

11. Frequent inspection should be made of service lines to make sure that leaks in pipes and connections are not wasting water and overworking pump.

Water is the most important factor contributing to better living, health and production on your farm. You can make sure that you'll have water when and where you need it by having a preventive maintenance program for your water system. □□

CHROMALOX
THERMWIRE MATS
keep chicks warm in coldest weather

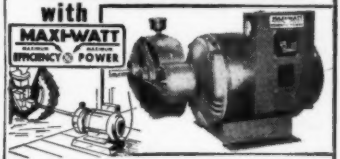


Don't risk the loss of your chicks or pigs by not giving them the proper warmth to stay healthy during cold or damp weather. Insure their health by installing Chromalox Electric Thermwire Mats in the floor of their pens. Just unroll mats in form, pour concrete, then install Chromalox thermostat. For snow melting, too. Size 6' by 18" and 10' by 18" can be connected end-to-end or side-by-side. Six footer: $19.95. Ten footer: $21.95. Write today for folder M60100 and distributor's name.

FARM BETTER ELECTRICALLY

CHROMALOX
ELECTRIC HEAT
EDWIN L. WIEGAND COMPANY
7580 THOMAS BOULEVARD • PITTSBURGH 8, PA.

WINCO® POWER INSURANCE TRACTOR GENERATOR
with
MAXI-WATT

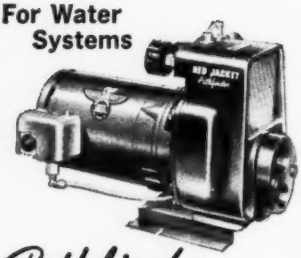


Provides dependable emergency electric power for lights, heat, refrigeration, milk cooler, and water system. New WINCO 12 KW PTO with MAXI-WATT gives Extra Power, Performance, and Value! Belted tractor model and complete line of tractor and engine generators from 1500 to 10,000 watt. For complete information Write Dept. EF-91.

WINCHARGER CORP.
Subsidiary of Zenith Radio Corp.
SIOUX CITY 2, IOWA

PUMPS YOU CAN TRUST

For Water Systems



Pathfinder

SINGLE OR MULTI-STAGE CONVERTIBLE JET PUMPS

You can trust these pumps to give you the dependable service and high capacity farms and farm homes need. Their design is based on over 80 years of water system engineering experience and they incorporate only the best materials.

For Sprinkling and Irrigation

Pathfinder **PSM**

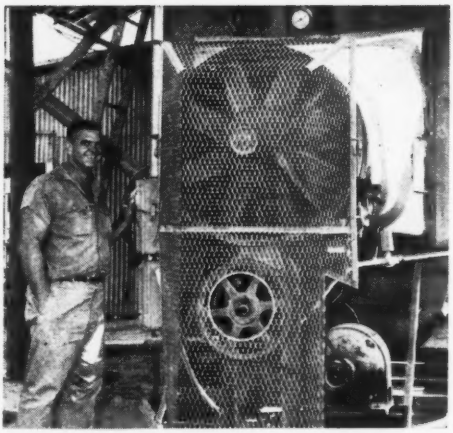
MULTI-STAGE SELF-PRIMING SHALLOW WELL. You can trust "PSM" self-priming models to pump from open ponds or streams and push water through sprinkler pipes at high pressure.

Ask your Red Jacket dealer to tell you about Pathfinder pumps—he's listed in the Yellow Pages. CJ-71

RED JACKET WATER SERVICE PRODUCTS

RED JACKET MANUFACTURING CO.

Davenport, Iowa



Drives and fans of batch grain drier on Ralph Powers farm at Moyock, N. C. are well-protected with expanded metal mesh guards welded to angle iron frame.

How to Make a Machinery Guard

Moving machinery, such as motor shafts, belts, gears, chains, etc., can be extremely dangerous if not protected by a guard. While guards may be made of any number of materials such as sheet metal or wood, those made of high-grade wire screen have these advantages:

- They are more transparent than other guards—all details of the guarded machine can be seen without difficulty.
- They do not hinder air currents—important with electric motors that may overheat where ventilation is poor.
- They can be made strong enough for almost any guarding purpose.
- They are lightweight, and can be removed and handled easily.
- They are simply made, since wire screen can be bent to almost any desired shape—for some enclosures a single joint often suffices.
- Stiff wire screen is self-supporting and seldom requires intricate framework.

An easy method for making wire guards for almost any purpose is to make the framework of angle iron and the sides of wire screen of a suitable mesh.

First make the frame. Angle iron is not easily bent without cutting out portions of the flange. That is, cut out some "V"s from the inner flange where the bend is to be made. The angle of the "V" should be equal to the angle of the bend wanted. If the bend is to be 90 degrees, cut out a square "V"; for a 45-degree bend, a 45-degree "V", and so on.

After the frame is formed, put in the wire screen or wire cloth. The quickest way is to weld the wire in place. The frame may also be welded together before proceeding with the wire. Simply "spot-weld" the wire terminals in place on the inner flange of the frame. If no welding outfit is available, the wire may be either riveted or bolted in place. Punch holes through the inner flange at the wire terminals and then rivet or bolt. When carefully made in this manner, an all-metal guard should last almost indefinitely.

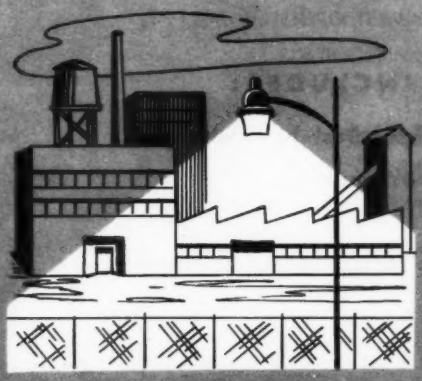
W. F. SCHAPHORST

PROFIT
SAFETY
RECREATION
CONVENIENCE
PROPERTY PROTECTION

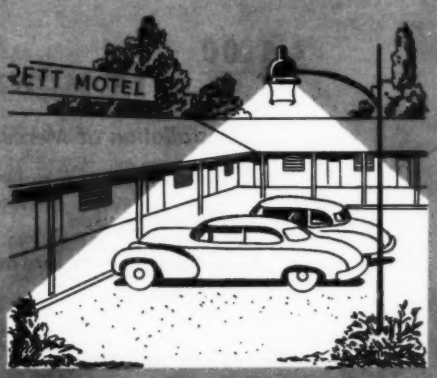
DUSK-TO-DAWN LIGHTING SERVICE

FOR HOME

FOR FARM



FOR INDUSTRIAL



FOR COMMERCIAL

COSTS ONLY PENNIES A DAY

18A

Now . . .

You Can End Your OUTDOOR LIGHTING PROBLEMS

FOR ONLY

$4 PER MONTH

$4.00 PER MONTH INCLUDES:

1. *Installation of Mercury Vapor Dusk-To-Dawn Light.*
2. *Installation of a pole where necessary.*
3. *Electricity used.*
4. *Complete maintenance including replacement of Lamp.*

Appalachian Power Company

AEP

An Investor-owned Public Utility

18B

DUSK-TO-DAWN service . . .

. . . as automatic as the sunset

When the sun goes down, the Dusk-To-Dawn light comes on automatically creating a bright area of light that discourages prowlers, helps prevent accidents and adds nighttime beauty. Whether you are at home or away, you can rest assured your Dusk-To-Dawn light is on duty.

Join the thousands of customers already enjoying Appalachian's automatic DUSK-TO-DAWN lighting service:

TYPICAL INSTALLATIONS:

CHURCHES
SCHOOLS
PARKING LOTS
RESTAURANTS AND DRIVE-INS
SERVICE STATIONS
TRUCKING TERMINALS
SKATING RINKS
FARM GASOLINE PUMPS
FARM FEED LOTS
INDUSTRIAL PLANT LOADING AREAS
RESIDENTIAL DRIVEWAYS
RESIDENTIAL RECREATION AREAS
MOTELS
AUTOMOBILE SALES LOTS

AEP

Appalachian Power Company

An Investor-owned Public Utility

Enjoy these Benefits of

DUSK-TO-DAWN Lighting

SECURITY Eliminate that creepy feeling. Discourage nighttime vandalism, theft and trespassing with a Dusk-To-Dawn "silent watchman".

SAFETY Help prevent accidents at work or play . . . guard against unseen hazards . . . end stumbling and groping in the dark.

CONVENIENCE Light your loading dock, farm yard or other work area around the clock without any concern or attention on your part.

RECREATION Get full nighttime use of your patio or yard for safe, enjoyable outdoor recreation.

PROFIT Bring nighttime beauty and prestige to your premises . . . and more customers.

CLIP AND MAIL THIS COUPON TODAY —
or call or visit your Local Appalachian office for all the facts on our automatic Dusk-To-Dawn lighting service.

Mail to: SYSTEM COMMERCIAL DEPARTMENT — Room 403
Appalachian Power Company, Roanoke, Virginia

☐ Send Facts on Dusk-To-Dawn Lighting
☐ Have Representative Call

Name_____

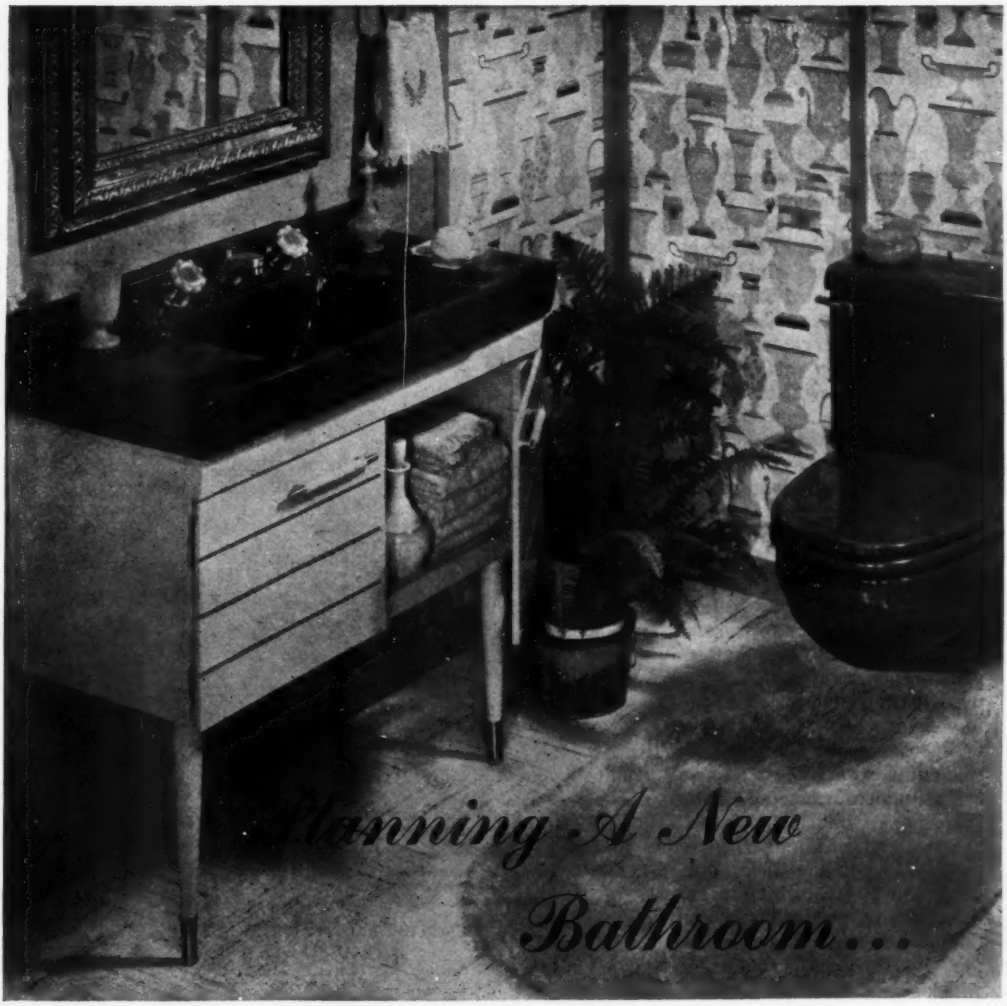
Address_____

City_____ State_____

AEP

Appalachian Power Company

An Investor-owned Public Utility



Off-the-floor fixtures in the modern bathroom contribute to an airy and spacious look.

THE ULTIMATE in luxury is for each member of the family to have a bathroom of his own. But there are few of us who are so fortunate. It is surprising, however, how little it can cost to remodel an antiquated bath or even to add a new one in an old house.

If you have been thinking of making some changes in this area of your home, we have a few suggestions for your consideration which may help solve a problem or two. The next three pages have ideas for remodeling and adding bathrooms.

THE FARM HOME BY RUTH GAFFNEY

Remodeling your present bath...

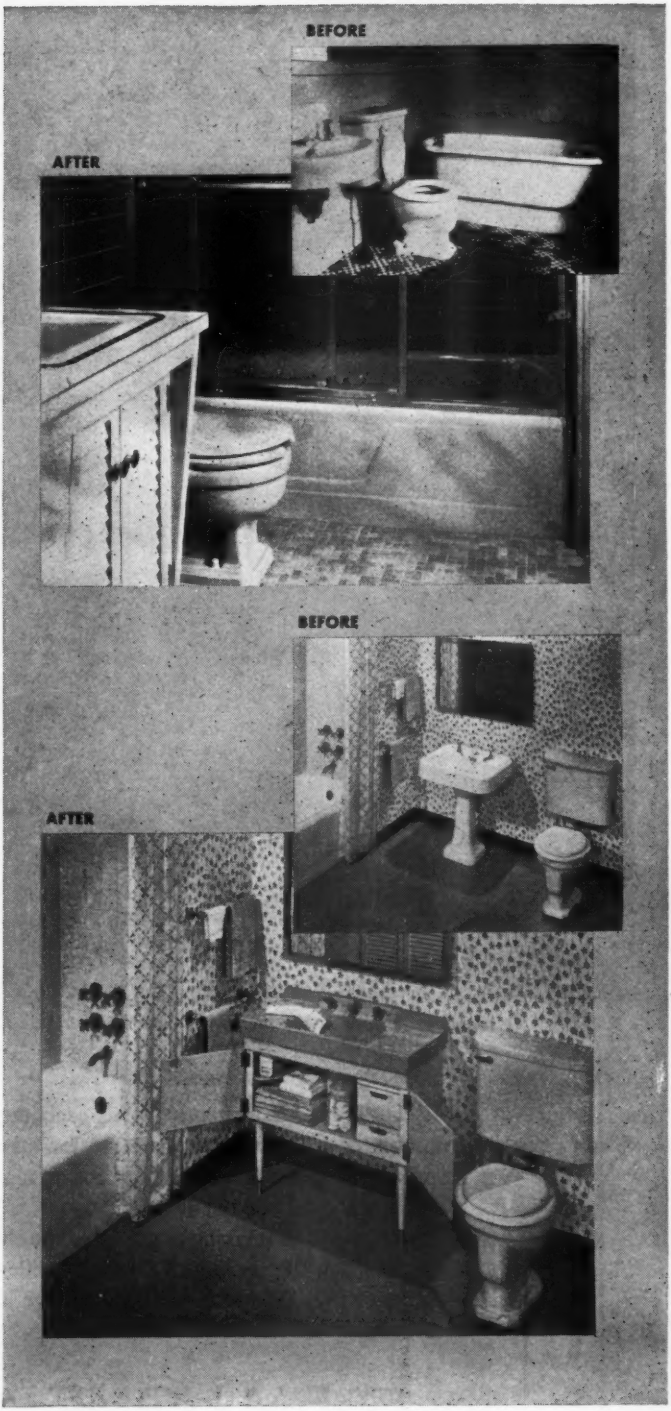
Among the many advantages of a new bathroom are easier maintenance, along with an improved and more pleasing appearance. The "before" and "after" photographs at the *right* bring these advantages into sharp focus in a remodeled bathroom. Up-to-date fixtures provide beauty and convenience; storage—greatly needed in this area—is generous. The new fixtures have been placed in the same arrangement as before, which is a practical and money-saving step. New floor and wall coverings are colorful and easy to take care of and contribute their share to the modern look.

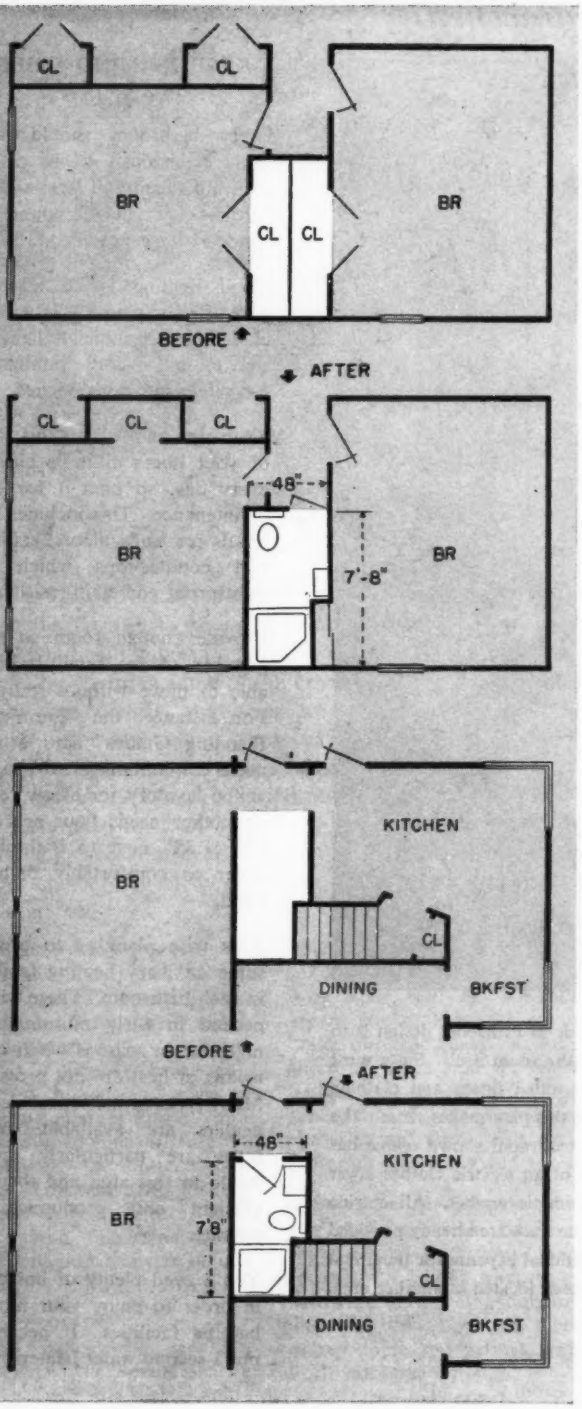
Sometimes budget requirements make it necessary to improve a bathroom one fixture at a time. "Before" and "after" photographs at *lower right* show what happens when even one new fixture is added. Lavatory with convenient space on each side and storage in an attractive cabinet underneath completes an inexpensive remodeling project.

Space for bathrooms is often precious. You'll find a wide choice in types of fixtures to meet varying needs. You'll also find a variety to fit budget needs, too. If you want a bathroom with colored fixtures, again you have a choice.

Trends in bathroom design are: twin lavatories for use of several members of the family at the same time; compartmented toilet facilities; ample storage for bathroom supplies and linens; built-in soiled clothes hampers. Generous mirror space over lavatories for shaving and make-up viewing takes place of narrow medicine cabinet on the wall.

Open up the bathroom area to bring in as much natural light and air as privacy will allow, using skylights or floor-to-ceiling glass doors or windows.





Adding a bath...

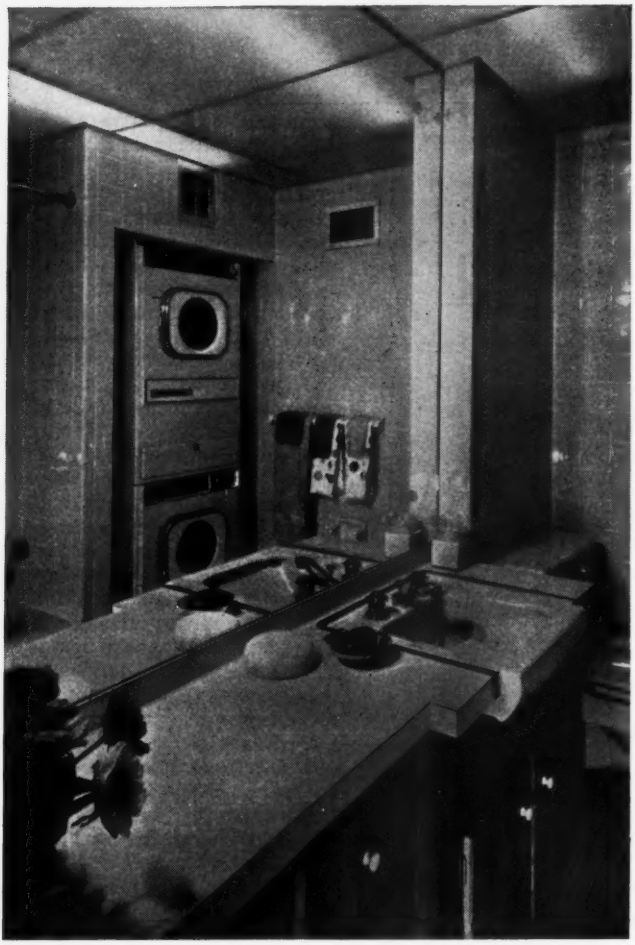
In addition to remodeling, it might be wise to investigate the possibility of adding either a full bathroom or a half-bath. "Before" and "after" floor plan at *upper left* shows how it is possible to use the space occupied by two closets to add a bathroom. It would service the two adjoining bedrooms and greatly relieve "traffic" in another bathroom.

Of particular interest to the requirements of a farm home is our plan *(lower left)* for a downstairs bathroom—or "mud room." It should be located very near an outside entrance and should include space for hanging coats and dirty boots used in heavy work. An arrangement of this type will prevent tracking mud into the living areas of the house. It will also make housekeeping easier, to say nothing of the additional convenience it offers every member of the family.

Our floor plan suggests that one place to look for space for an arrangement of this type is under a stairway. One family we visited had remodeled what had been a rather cluttered and generally useless room just off the kitchen for this purpose. They included an automatic washer and electric clothes dryer between the two rooms. Soiled shirts, slacks, socks, etc., went right into the washer and never saw the sacred precincts of the bedroom. The farm homemaker told us it had cut her housekeeping time just about in half. The menfolk and the children liked the additional convenience, too.

If a full bathroom is not practical for you, a half-bath could be a great help. This is particularly convenient when there are small children and elderly members in the family. You'll find that the cost is surprisingly modest.

Planning A New Bathroom...



One of the newest trends in bathroom design is to include laundry facilities within the room itself. Since most of the family's soiled linens and clothing originate in this area, this plan makes sense. The smartly modern and attractive bathroom shown *above* has the space-saving arrangement of an electric clothes dryer on top of an automatic washer. All outside venting, and plumbing and waste lines are already provided here, thus saving additional expense for them had the laundry been located in another area.

KEEP IN MIND WHEN PLANNING

Every bathroom should have some mechanical means of exhausting steam and stale air, regardless of the amount of window space provided.

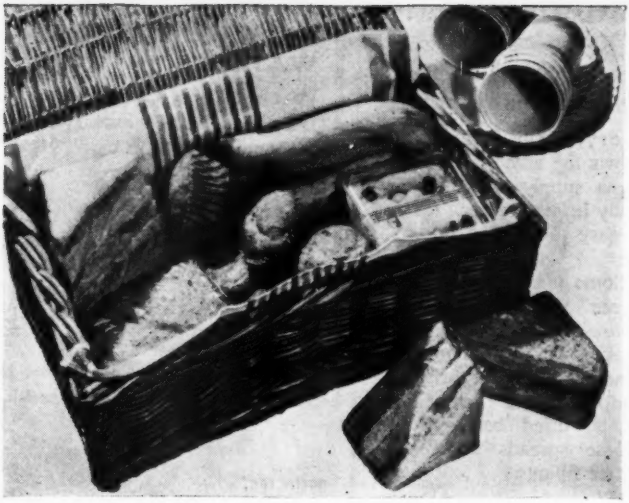
Good lighting is an essential part of your plan. This will include not only sufficient light for shaving, but overall illumination for safety and convenience.

Keep in mind that this area of your home must be cleaned every day, so plan it for easy maintenance. This includes materials for walls, floors, ceilings, and counter-tops which are waterproof and stain-resistant.

Provide enough room so each member of the family will be able to move without restraint. For instance, the "Farmhouse Planning Guides" says a man needs a minimum of 36″ to 40″ at the lavatory for elbow room. A mother needs floor space of 42″ x 32″ next to bathtub in order to comfortably bathe a child.

It is wise planning to provide some auxiliary heating facilities in each bathroom. These will be needed in early morning, late night, or in seasons when other means of heat are not provided. Many types of individual electric heaters are available. Wall-types are particularly appropriate in this area and they are efficient and economical to operate.

You'll need plenty of hot water in order to enjoy your modern bathing facilities. If necessary, put a second water heater in this area.



A Variety of Sandwiches

WHETHER it's a school lunch basket, a lunch for extra workers on the farm, or a spur-of-the-moment picnic, sandwiches are sure to be an important part of the menu. Lend appetizing interest by choosing some of the great variety of breads you'll find at your favorite bakery or grocery. In addition to the popular white and whole wheat varieties, there are unusual types of foreign breads. French, Italian, and Vienna are familiar, as well as the often-requested raisin and cinnamon breads which are ideal for fruit or raw vegetable fillings; corn meal, oatmeal, loaves sweetened with molasses or honey give you further choice. All of these are not only delicious but highly nutritious, too.

TUNA SENSATION

Combine 2 tablespoons Russian dressing with ¼ teaspoon Worcestershire sauce, then add 1 cup flaked tuna (1 7-oz. can). Spread 12 slices rye bread with softened butter and slice 2 medium tomatoes into 12 thin slices. Spread tuna mixture on 6 slices of the buttered rye bread. Top each with 2 slices tomato and a lettuce leaf. Cover with remaining bread slices; cut into quarters before serving.

HAM 'N' OLIVE

Spread 12 slices white or whole wheat bread (or use one slice of each variety for each sandwich) with a mixture of ¼ cup pimiento-stuffed olives and 1 3-oz. package of softened cream cheese. Place 6 slices of boiled or baked ham on half the slices of bread and top each with a crisp lettuce leaf. Close sandwiches with the remaining cheese-spread slices. Cut each sandwich diagonally and serve.

OPEN-FACED LIVERWURST

For each sandwich, butter a thin slice of dark bread and spread with a fluffy mixture of liverwurst and mayonnaise. Top with thin, unpeeled slices of red apple and garnish with finely chopped onion.

(*See next page*)

What a Combination!

No Submersible Pump on the Market Can Match It.

It's the dependable, high-capacity combination of . . .

"Control Flow" Stage Design (positively will never overload motor)

AND

16 Spline Stainless Steel Pump Shaft (produces an amazing driving force efficiency of 98%)

FOUND ONLY IN **BURKS**

Hydro Sub **Submersibles**

These and the other desirable features of this new submersible pump are a result of BURKS' 47 years of building quality into pumps and water systems for farm, home, and industry.

For a quiet, trouble-free water system with the right capacity . . . at the right price . . . see your BURKS dealer . . . about a Hydro Sub Submersible Pump.

BURKS

DECATUR PUMP CO.

2750 NELSON PARK ROAD
DECATUR, ILLINOIS

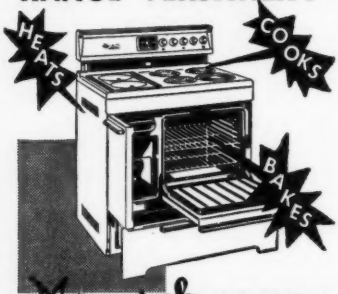
BUY THE HYDRANT THAT *DEFINITELY* WILL NOT FREEZE

Vari-Flo Model F-55—¾" size. Cam-Lock Model B-56—1" size. Bury Depth — 2, 3, 4, 5 or 6 ft., depending on frost level in your area.

See your well driller, plumbing, water systems, or hardware dealer — or write us direct!

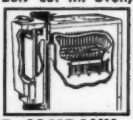
The Columbiana Pump Co.
RAILROAD STREET
COLUMBIANA, OHIO

complete package of **RANGE VERSATILITY**



Monarch SINCE 1896 **36 INCH ELECTRIC COMBINATION**

Monarch electric combination range offers new all 'round kitchen efficiency—it cooks, bakes, heats. Features include stylish mantel back, full complement of automatic controls, giant 6726.9 cu. in. oven, super speed surface unit electric section, and heater section for added warmth and cooking.



built-in coal-wood or oil heater section

MONARCH RANGE COMPANY
7081 LAKE ST., BEAVER DAM, WIS.

SANDWICHES . . .
(continued)

SANDWICHES IN THE FREEZER

Every farm homemaker knows the advantage of having a supply of sandwiches ready in the freezer. It's just as easy to make a dozen as six.

Some sandwich ingredients freeze well, others don't. *Those which do are:* hard-cooked egg yolk, cooked or canned chicken, turkey or seafood, cooked or canned meats, dried beef, cheeses, cheese spreads and peanut butter fillings.

WHAT NOT TO FREEZE

Avoid using fillings with cooked egg white because it becomes tough and rubbery. Tomatoes, cucumber, lettuce, radishes, green pepper, carrots and others lose crispness, change flavor when frozen.

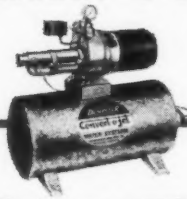
HOW TO PREPARE AND WRAP

Spread bread or rolls with butter, dairy sour cream or cream cheese; avoid mayonnaise or salad dressings as spreads for they separate when frozen and soak into the bread. Use them sparingly as binders for salad-type fillings. Spread butter or other spreads to edge of bread to keep fillings from soaking into bread during freezing and thawing.

Wrap each sandwich in waxed or transparent wrap, then in moisture-vapor-proof material such as aluminum foil or plastic film. They will keep 2 or 3 weeks. Be sure to close each wrapping securely and label with contents and date it was placed in freezer. Store away from bottom and sides of freezer to avoid ice crystals on package. Most sandwiches thaw at room temperature in about two hours. □ □

CONVERTIBLE WATER SYSTEMS
With More Capacity, Depth and Pressure!

DEMPSTER
CONVERT-O-JET



DEMPSTER offers you a **complete** line of Convert-o-jet convertible water systems—a choice of ⅓, ½, ¾ or 1 HP motors and extra-powerful ½ HP Dual Convert-o-jet. Capacity up to 1,480 gph, pressures to 60 psi and depths down to 120 ft. Everything furnished for quick conversion!

DEMPSTER PRIME-O-JET, the low-cost, high quality, self-priming shallow well systems—⅓ or ½ HP—capacities to 1,010 gph, maximum suction lift 25 ft. Pressure tank or Matched-Flow (with mounted 4 gal. tank) models.

See Your Dempster Dealer or Write
DEMPSTER MILL MFG. CO.
Beatrice, Nebraska

STOP

IT RUINS!
- CLOTHES
- PLUMBING
- FOOD

DIAMOND 3-way Water Conditioner removes ALL soluble and suspended iron, gives completely pure, clear, soft water—AUTOMATICALLY. Requires only occasional salt refill. Four sizes. Eight capacities. Write:

OSHKOSH FILTER & SOFTENER CO.
OSHKOSH, WISCONSIN

Sew a Fall Wardrobe

9321—Wide-away collar tops this pretty step-in style. Printed Pattern in Misses' Sizes 12-20; 40. Size 16 takes 4⅞ yards 35-inch fabric. 35¢

4877—Casual shirtdress features the new T-panel skirt. Printed Pattern in Half Sizes 14½-24½. Size 16½ takes 4 yards 39-inch fabric. 35¢

4950—Amply cut apron for larger figures. Printed Pattern in Women's Sizes 36-50. Small Size (36-38) takes 2⅞ yards 35-inch fabric. Embroidery transfer. 35¢

9325—Slimming Half Size dress with a soft, face-framing collar. Printed Pattern in Sizes 12½-24½. Size 16½ takes 3¾ yards 45-inch fabric. 50¢

4915—Thrifty blouses take little sewing time, little fabric. Whip up all three styles. Printed Pattern in Misses' Sizes 12-20. See pattern for yardages. 35¢

9391—A Christmas gift for you know who! Doll wardrobe includes coat, hat, dress, bunting, playsuit, skirt, robe, nightie, slip, panties. For dolls 10, 12, 14, 16, 18, 20 inches tall. STATE SIZE. 35¢

4654—Half-size jumper, classic blouse. Printed Pattern in Sizes 14½-24½. Size 16½ jumper: 3 yards 39-inch fabric; blouse 1¾ yards 35-inch. 35¢

PATTERN 9325 is FIFTY CENTS. Patterns 9321, 4877, 4950, 4915, 9391, 4654 are THIRTY-FIVE CENTS each. Add 10¢ each for 1st-class mailing. Send 35¢ for new color Catalog of Fall-Winter Fashions. Cover illustration above.

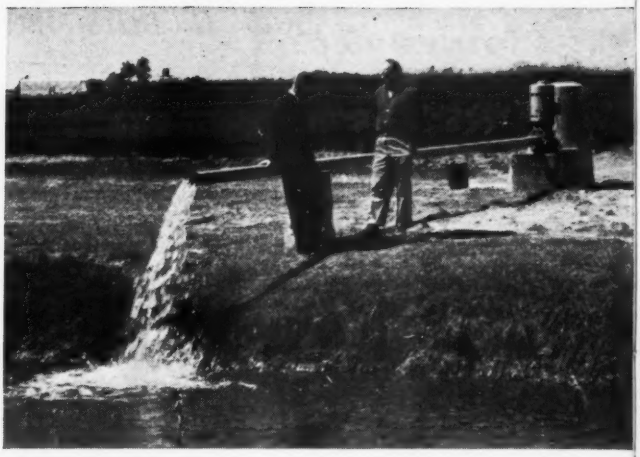
Send orders (with coin) to:
ELECTRICITY ON THE FARM,
Pattern Department, P.O. Box 122,
Old Chelsea Station, New York 11, N. Y.

THINKING OF A NEW WATER SYSTEM?

Sorry, until we know the problem, we can't recommend any water system—even this one! Call the man who displays the **FLINT and WALLING** sign! He's an expert in water systems. And wells and water systems are a job for experts . . . not amateurs. Look for your **FLINT and WALLING** man in the **YELLOW PAGES**, or write for our free "Buyer's Guide."

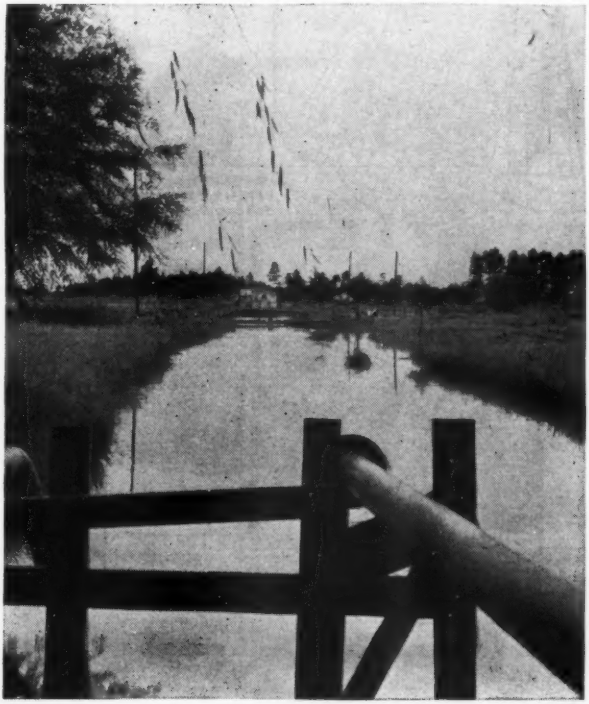
FLINT WALLING

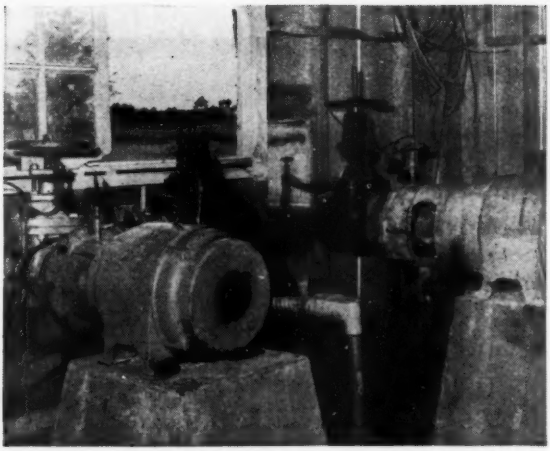
Water Systems
KENDALLVILLE, INDIANA



Considerable water is required by potted plants, making irrigation a necessity. During mid-summer, Dodds often water twice daily. The source of their water is a million-gallon dug reservoir. Three 10 hp turbine pumps like the one shown here pump water from wells into the reservoir around the clock.

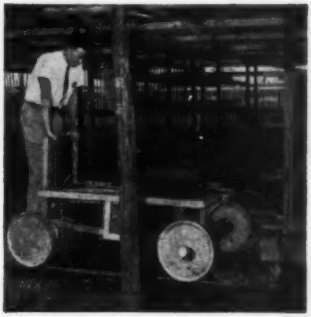
These Pumps Keep





Two 10 and two 20 hp irrigation pumps in pumphouse built over reservoir operate singly or simultaneously to provide water in whatever amount is needed.

Plants are potted at one end of 90 x 600-ft. shade house. They are moved along the length of the shade house by a battery-powered cart that pulls 4-tiered trailer. The cart and trailer have capacity of 36 flats of potted plants. Original rubber-tired wheels on the cart were replaced with grooved metal wheels that run on track made of angle iron. Four 6-volt batteries that power the cart are recharged electrically at night or when not in use.



Nursery's 'Lifeblood' Flowing

By S. H. BOOKER

At Semmes, Alabama, only a short distance from Mobile, Tom Dodd Nurseries, Inc., produces more than 2 million plants every year. These are sold all over the country. The Dodds keep between 30 and 40 acres covered with shrubs growing in pots. Here is some of the equipment that helps them get the job done.

◀ Irrigation water for 30 acres of potted plants is stored in dug reservoir that is 20 ft. wide, 300 ft. long and an average of 8 ft. deep. By pumping into the reservoir around the clock, Dodds say they have enough water to operate their nursery sprinkler irrigation system at capacity for 8 hours a day.

I INSIST ON
EASY-HEAT
FREEZE-
PROTECTION!
Keep water flowing all winter long in pipes and V-shaped troughs. Quality-built Easy-Heat —in 3′ to 100′ lengths— comes with or without thermostat. Complete kit has waterproof wrap plus friction tape. Insist on Easy-Heat at your farm supply store.
EASY-HEAT, INC.
Mfrs. of Concrete Floor Heaters
Dept. EF, New Carlisle, Ind.

PURE SPARKLING WATER

from your own well or pond!
ELIMINATE IRON, SULPHUR and water-borne disease bacteria with a CD PACK® which combines: EVERCLOR automatic chlorination to kill bacteria...oxidize iron and sulphur.
PLUS
EVERPURE superfiltration to make water sparkling clear . . . remove chlorine, bad tastes, and odors.
Used on farms everywhere—for the best water in the world!
And it costs so little.

Write today for full information

EVERPURE, INC.
MANUFACTURERS
2627 West 19th Street
Chicago 8, Illinois

Now you can get
FREE HOT WATER
from your bulk milk cooler by installing
Thriftchanger
for details, write:
Sturges Heat Recovery, Inc.
Stone Ridge, New York
FARM BETTER ELECTRICALLY

SHELL CORN THIS FAST EASY WAY
135 TO 180 BU. PER HOUR

You've never seen anything to beat BELL'S NEW LOW-COST BALL-BEARING SHELLER. Shells corn about as fast as you can shovel it into the low-built easy feeding hopper, as shown. Equipped with 2-Bag Sacker, wagon loader, cob shaker or cob elevator as desired. Feed large or small, hard or soft ears. Pays for itself in time and labor saved. Electric motor, gasoline engine or tractor power. Write today for illustrated Folder and dealer's name.

The C. S. BELL CO.
Manufacturers
Dept. E.
HILLSBORO, O.

Egg collecting with electric cart is effortless, with "feeler wheel" in front guiding cart down the aisle. Since cart is odorless and noiseless, hens are not frightened or excited during feeding and egg collecting.

Caged Hens Get Their Meals "a la Cart"

By HARLOW HOTRUM

There is nothing more constant than change at the Cherry Hill poultry farm near Spokane, Washington, as owner Frank Davidson and manager Tim Kenney seek new and better ways to operate. In the latest development at Cherry Hill, the problem of increasing the number of hens in existing poultry house facilities was resolved through a "caged layer" experiment.

This in itself raised another problem—how to feed and gather the eggs from caged layers? The solution—an electric battery-operated cart which greatly increases the efficiency of caged layer operations.

About two years ago, Davidson and Kenney started with the caged layer experiment. By putting their hens in cages, they found they could reduce the floor space needed from 2 sq. ft. per hen to 1 sq. ft., with no increase in man-hours and a great savings in housing costs. They now had 4500 hens in a space which formerly housed 2400. And, as added benefits, they found that they got 96% clean eggs and a healthy increase in production.

But a means had to be found to speedily feed the flock and gather eggs. They found that the electric cart is particularly adaptable to poultry farms because it makes no noise and doesn't give off any harmful fumes. Its electric motor operates smoothly and evenly.

In feeding, a feed hopper is placed on the cart's platform and filled at the feed room. The hopper itself has an elevating auger and a second electric motor. As the operator starts the cart rolling, the motor on the auger also goes into operation and feed is dropped into the feeding troughs as the cart moves down the alley between the cages. It takes only a few minutes to handle the entire feeding chore.

The cart also is used for egg collecting. The feed hopper is removed, providing a motorized platform on which the egg picker may ride and carefully gather the eggs. The cart guides itself along the edge of the cages with a "feeler wheel" so that the operator is free to pay complete attention to his work.

At the end of the day, the electric cart is plugged into a battery charger and the batteries are recharged for the next day's work. It rides on four rubber tires, the two in back providing power while the two in front guide the machine quickly and quietly through the poultry house. □ □

◀ After day's work, cart is plugged into charger to replenish its batteries.

NEW *COMPACT* BULK MILK TANK COSTS LESS THAN CAN EQUIPMENT

For Diversified Farmers With Small Dairy Herds

DIRECT FACTORY PRICES

Now the price barrier is broken on farm bulk milk tanks — for the diversified farmer with a small herd. The new, small DUNCAN-COMPACT BULK MILK COOLER — made by makers of the famous ZERO Tank — gives you the labor-saving, time-saving, higher-milk-quality advantages of bulk operation. Enables you to *make the milk profit you want*, but can't get with a profit-eating can operation. Yet this DUNCAN-COMPACT *costs less than can equipment!*

SIZES START AS SMALL AS 100 GALLONS. Available with 3-A symbol. Vacuum model for present cow-to-can producers. Only 36 inches wide. Easy to install. Waterproof Urethane plastic foam insulation. Many other profit-making features.

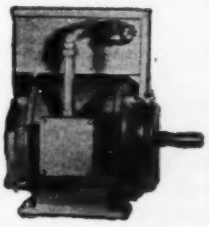
DIRECT FACTORY PRICES AND FINANCE PLAN make it easy to own. Make payments out of increased milk profit. Write for FREE full information, prices, sizes, capacities, details of Finance Plan — today!

DUNCAN PRODUCTS, Inc. 4
Dept. I-9 **Washington, Mo.**

FARM BETTER
ELECTRICALLY

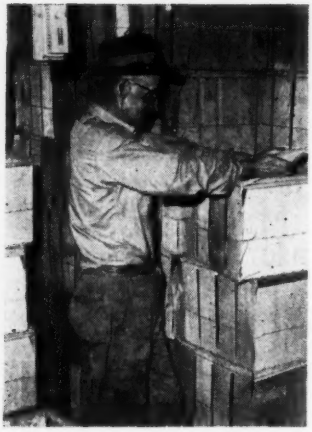
NOW! SINGLE PHASE MOTORS TO 60 H. P.

THE POWER-TWIN UNIVERSAL MOTOR®



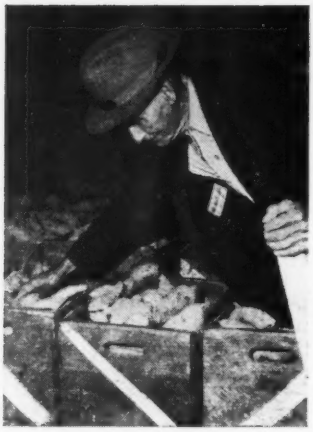
This motor is ideally suited for farm applications, with proven dependability in thousands of installations. Efficiency exceeds other single phase motors; requires no balancing; accepted by many farm equipment manufacturers as standard equipment.

WRITE TO: **SYSTEM ANALYZER CORP.**
DEPT. EF., NOKOMIS, ILL.



Graded and crated, yams are put into W. C. Lesley's potato house for curing and storage. Thermostat above his head is set at 80° during curing and 50° for winter storage.

500-watt strip heaters beneath slatted floor provide even temperature for curing and switch on automatically throughout winter to prevent cold damage during storage.



Even heat, supplied electrically, enables growers to cure quality yams. Yams can be held until spring, if necessary, to get a stronger market, with minimum loss from rotting.

For higher prices . . .

Sell Heat-Cured Yams In Off-Season Market

Through the years, high school vocational agriculture departments have sponsored community sweet potato curing houses to let farmers see for themselves the value of artificially curing potatoes.

As a result, many commercial growers have built their own curing houses. Smaller producers in some localities still use the community houses. That is the case at Spartanburg County District I school in South Carolina. Officials say that approximately 100 farmers bring freshly-dug yams to the curing house.

Curing Takes 12 Days

A. J. Harris, who looks after the house, says that curing requires only 12 days. After that, the potatoes are left in storage until they are desired for family use or for marketing. The curing house has three 20 x 30-ft. rooms. Twelve 500-watt strip heaters in each room supply the heat to keep the temperature at 80° during curing. These electric heaters are located beneath the slatted floor and are automatically controlled by a thermostat.

After curing is completed, the thermostat is set back to 55°, Harris says, to provide protection against cold damage. Deadline for removing yams is April 1. Harris explains that after this time temperatures rise and the potatoes do not keep well.

Commercial Grower Picks His Markets

A commercial grower, W. C. Lesley of Northport, Alabama, lists the obvious advantages of curing and storing potatoes. "You don't have to dig them and dump them on the market," he points out. "You can hold them until spring, if necessary, and this gives a chance to pick the stronger market. Furthermore, there is minimum loss from rotting or other reasons."

Lesley uses electric strip heaters in his 2000-bushel curing house. Automatic temperature controls insure an even heat during curing. Also important, he says, is proper ventilation. □□

Two bats were watching another bat flutter through some of the ODDEST maneuvers. Finally one shook his head. "Gosh!" he exclaimed, "He must have PEOPLE in his BELFRY." . . . . . STATISTICS prove that the BEST TEN years of any woman's life are between 28 and 30 . . . . . SODDEN THOUGHT: MANY an OPTIMIST has become rich simply by buying out a PESSIMIST . . . . . SIGN in a LOAN OFFICE window: DRIVE CAREFULLY—THE LIFE YOU SAVE MAY OWE US MONEY . . . . . OVERHEARD at the corner BEANERY: Customer: "Do I have to pour the cream in myself?" Waitress: "No, JUST in the COFFEE!" . . . . . FLIP QUIP: The OLDER a lamb grows the MORE SHEEPISH he becomes . . . . . Investigations show that much of today's CRIME is caused by YOUNGSTERS prowling about at night. TOO LITTLE and TOO LATE, maybe? . . . . . Then there is the story of the kindly warden who whispered to the convict on the way to the electric chair, "More POWER to you, son." . . . . . MODERN PARENT: one who puts the cat out at night by shutting off the hi-fi (Quip) . . . . . SOONER or LATER every woman MUST make a choice between motherhood and a career. SHOULD she give the cereal box-top to Jimmy to send for a compass, or SHOULD she keep it herself and enter the $10,000 contest? (Herbert V. Prochnow) . . . . . SPEAKING OF CHILDREN, this from a ten-year-old of our acquaintance: "I hate girls, and I'm glad I hate 'em, 'cause if I didn't hate 'em, I'd like 'em, and I hate 'em!" . . . . . OVERHEARD: "She's been to RENO so often, she's a little SWAP-WORN." . . . . . PARTING THOUGHT: Matrimony is a proving ground on which FAITH, HOPE and CHARITY get a good work-out . . . . .

Your pun-peddler—Duffy

ENGINEERED FOR MODERN FARMING

Rapidayton

SUBMERSIBLE PUMPS

Depths to 1000 ft. • Capacities to 140 g.p.m. • Pressures to 120 p.s.i.

for animal-centered agriculture • irrigation • farm homes

Modern, profitable farming requires *more water* in *more places* — with higher capacity and higher pressure. You can rely on Rapidayton submersible pumps, quality-built to insure that extra heavy-duty performance and 24-hour-a-day dependability so vitally essential in a farm "lifeline." Ideal for pressure tank systems; free-flow irrigation and sprinklers; livestock watering, sanitation, and waste removal; fire protection. There's a Rapidayton submersible pump for *your* need. Write for new idea-packed folder on farm applications.

Rapidayton division
The Tait Manufacturing Company
Farm Department No. 777, Dayton 1, Ohio

Save Money By Doing Your Own Repair and Fabrication Work!

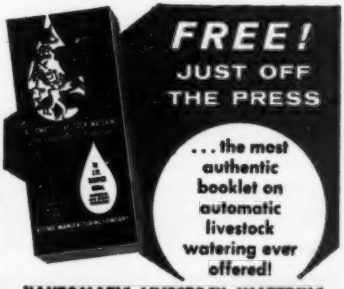
EMERSON ELECTRIC
Portable 180C

WELDS
CUTS
BRAZES
SOLDERS

The Emerson Electric Portable 180C delivers maximum amperage for any of 6 welding heats up to 180 amps. Can be used with twin carbon arc torch . . . all types of AC rods 5/32" to 1/8". Easily portable . . . weighs only 68 lbs.

Write today for prices and receive FREE WELDING SELECTOR GUIDE . . . gives the working data you need in seconds.

EMERSON ELECTRIC of St. Louis • Since 1890
8100 Florissant • St. Louis 36, Missouri



"AUTOMATIC LIVESTOCK WATERING ...THE LIFESTREAM OF PRODUCTION"

by J. W. (Jack) Sampier
Editor, National Livestock Producer

Valuable reading for every livestock man, every dairyman, every poultry raiser . . . by one of America's most noted farm editors. 24 fact-filled pages, complete with photos and water tables. Water is your cheapest feed . . . this book tells you how to use it for more profit! No obligation, it's yours for the asking. Just mail the coupon.

RITCHIE MFG. CO. 401 WALNUT ST.
CONRAD, IOWA

Please send me a FREE copy of the "Automatic Watering" booklet by Jack Sampier.

Name _____

Address _____ RFD _____

Town _____ State _____

Since 1921 • America's Most Complete Line of Waterers

JUNIOR PARTNERS

Mystery of the Lights

By M'NELLE GIBSON CAUSEY

Girls, ever wonder why the hose you buy seem just the shade you want—until you put them on, or why your make-up one day is fine and another doesn't seem just right?

Emily Roberts, a 4-H club member in Habersham County, Georgia, has one solution to the mystery. In her demonstration at State 4-H Club Congress she displayed hose and make-up under eight different shades of fluorescent lamps. The hose were all the same color and the eight pictures of make-up were identical, but it was hard to believe this when they were placed under different light. Before your eyes the make-up and hose seemed to change color eight times.

Emily used a shadow-box affair with eight compartments, each complete with a miniature light of a different shade. As she talked she placed under the lights the boxes of hose and the pictures of the pretty girl with her "just-right" make-up.

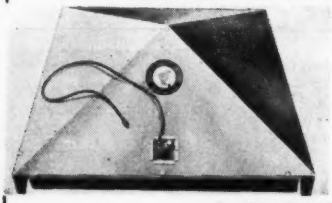
In 4-H electric demonstration, Emily Roberts used a shadow-box with 8 different fluorescent lamps.

Under store lights these things may seem an entirely different shade from the way they appear in daylight or in the lights at home or at a party. One would learn, too, listening to Emily, that other things—draperies, furniture, walls—seem to change color from the time they are selected until they are put into use under other light.

Seeing her home demonstration agent, Mrs. Ruby Deen Crider, give demonstrations on lighting aroused Emily's interest in the electric project. "I had thought of wiring and electrical equipment as being strictly for men," Emily says. "Then I began to realize that almost every homemaker is dependent upon electricity and usually enjoys some of the freedom that electric 'servants' offer."

Not all of Emily's demonstrations have been planned especially for girls. She also has conducted a lamp-making clinic in her home county.

You Are Dollars Ahead When You Choose BAILEY *Electric* BROODERS



Check these features:

- Low initial cost lets you afford the BEST
- Low operating cost means larger PROFITS for you
- The utmost in brooding CONVENIENCE, SAFETY and DEPENDABILITY

Plus FREE with every Bailey Brooder you now get a one year insurance policy that protects you against chick losses resulting from off-farm power interruption.

We ship directly to you or deliver larger orders at your farm. Local bank financing available. Write us for further information or prices.

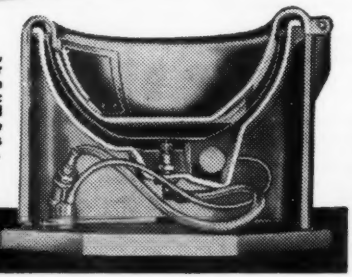
L. H. BAILEY & SONS

LI 3-5281 845 W. Broad Street, Athens, Georgia

For All Livestock! NELSON WATER BOWL

the ultimate in year 'round watering!

ONLY one moving part—no floats, levers, or springs to jam because of rust or corrosion. Provides clean, fresh water in summer; warms water in winter for 2c a day because thermostatically controlled electric heating element heats a mere bowlful instead of a tankful. Stainless steel and aluminum alloy construction. Completely automatic. Safe!



See your dealer or write

NELSON MFG. CO.

P. O. Box 616 Cedar Rapids, Ia.

get details on the...

WRITE FOR FREE PICTURES & PLANS

Silo-Matic®

UNLOADER and HOW TO FEED MECHANICALLY

SAVE TIME & LABOR MAKE MONEY

Dept. E

Van Dusen & Co., Inc., Wayzata, Minn.

Questions and Answers

Waterlogged Pumps

Q. *What causes my electric pump to start and stop very frequently when water is used?*

W. S.—Tennessee

A. Your pump is waterlogged. This trouble is caused by either an air leak in the pressure tank or improper operation of the air-charging device on pump. To correct, first check for air leaks in tank, especially around upper part. Do this by placing soap suds around top plug and welded seams. Any bubbling will indicate air leaks. Next, see if air snifter valve on pump is taking in air between minimum operating pressure of pump—20 lbs.—and 8 lbs. above minimum, or 28 lbs., by holding finger over it. Replace valve core if no air is being taken in. Use special pump valve core, not one for car tires. Car tire valve will fit, but has too strong a spring. Another cause may be air volume control float in pressure tank. If float ball is waterlogged or stuck in downward position, it should be replaced.

3-Wire Extension Cord

Q. *My house is supplied throughout with grounded outlets that will take the 3-prong grounded plug. Can I use grounded extension cords on my lamps, radios, and appliances that aren't factory equipped in this manner? (My electric drill, automatic washer, and lawn mower has the grounded cord.)*

C. J.—Mass.

A. There is now available at good electrical supply stores a 3-wire type extension cord in small sizes suitable for lamps, radios and other low amperage appliances. It is the type SPT-1, 300 volt 3 conductor #18 extension cord. There are not, at this time, however, small and delicate 3-prong plugs for use with this cord. You will likely have to use a heavy-duty black rubber cap plug. When connecting your 3-wire extension cord to lamps or other small appliances be sure to attach the third or ground wire to the frame of the appliance.

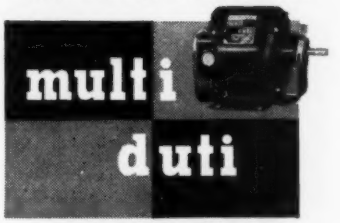
Laundering "Wash and Wear"

Q. *The "automatic wash and wear" labels I see intrigue me. I have such a dress, but am honestly afraid to put it through the washing machine and dryer. Am I being too cautious?*

E. I. D.—Delaware

A. If your dress is made by a reputable manufacturer of a wash-and-wear fabric—for example, one containing large percentages of synthetic fibers like nylon, dacron polyester fiber, or orlon acrylic fiber—and if buttons, zippers, and other construction details are also washable, you will be pleased with the performance. If the label carries laundering instructions, follow them. If not, these general hints may help you. Set machine for five-minute cycle, use warm (100° F.) water, and a heavy-duty detergent, or soap plus a water softener. Run washer through complete automatic operation, including spins and rinses. Tumble dry at low to medium temperature setting (140° to 160° F.) for 20 to 40 minutes, depending upon garment type. Avoid use of high temperatures—if available, use the special setting for fabrics of man-made fibers. At the end of drying cycle remove garment immediately and hang. It should be ready for wear within minutes, with little if any touch-up ironing needed.

Give Your Farm Tools New Life with EMERSON ELECTRIC



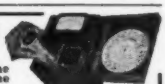
MOTORS

There's an Emerson Electric Multi-Duti Motor for every farm application . . . from milking machines to power tools. They're precision built and fully guaranteed by America's leading manufacturer of motors for farm, home and industry.

Write today for catalog and prices and receive FREE MOTOR SELECTOR GUIDE . . . tells you the right motor for your particular needs!

EMERSON ELECTRIC *of St. Louis • Since 1890*
8100 Florissant • St. Louis 36, Missouri

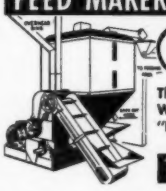
YOUR GRAIN IS SAFE



. . . . when you know the moisture content. The SAFE-CROP Moisture Tester tests all grains. It is accurate, portable and simple to operate. Nothing else to buy, the SAFE-CROP is a precision instrument yet is priced within reach of every farmer.

Write Today for Complete Information
BURROWS EQUIPMENT COMPANY
Department EL-9 Evanston, Ill.

Complete FARM FEED MAKER



3 in 1 MILL-MIXER and SELF UNLOADING STORAGE

The Handy, Easy, Profitable Way to Make Your Own "DUST-FREE" Fresh Mixed Rolled Feeds

New ROL-N-MIX

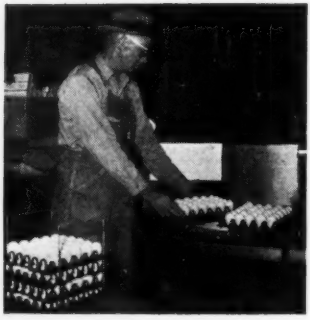
Now one low cost, compact unit provides all the basic equipment needed to make automatic feed making and feeding a reality on the farm. A size for every feeder. Also available in portable, P.T.O. models. Write for free literature.

Write for Free Literature

PEERLESS EQUIPMENT CO., INC.
Dept. 616, Joplin, Missouri

Eggs are gathered into plastic flats which nest 30 eggs each. Six flats stack into the holder.

How to get Fewer Cracked Eggs



Still on plastic flats, eggs are rotated through washer tunnel. Washing is continuous, with operator removing and replacing flats as they complete cycle.

Egg breakage has been reduced sharply on the William Smith farm at Statesboro, Georgia, since new equipment for collection and washing was installed a few months ago. Out of a total of 12 to 13 cases handled daily, the average number of cracks is down from near 90 dozen under the old system to 15 dozen per day.

The switch began with the collection units—a change from round, plastic coated baskets to plastic flats which nest 30 eggs, keep one egg from resting directly on another. Six of the flats stack into a holder to make a complete unit.

For washing, the eggs remain in the flats. They are rotated through a tunnel, requiring about 2½ minutes to make the circuit. Washing is continuous, with the operator removing flats as they come out of the washer and replacing them with flats of unwashed eggs. □ □

Advertisers in this issue . . .

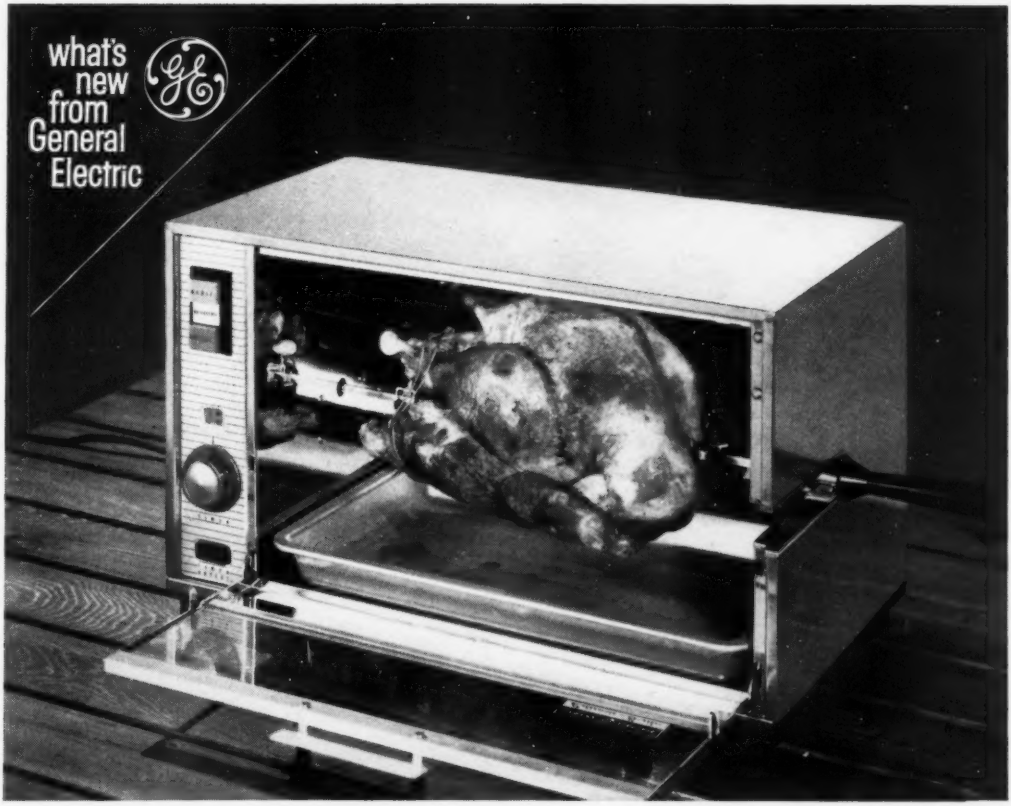
Southeast Edition

Whenever you need further information about electrical equipment and appliances, you can depend upon the Manufacturers who are advertising in this magazine. We have indexed here for your convenience in alphabetical order the Manufacturers whose advertisements appear in this issue.

When writing to these Manufacturers be sure to mention you saw their advertising in ELECTRICITY ON THE FARM Magazine.

	Page
L. H. Bailey & Sons	32
The C. S. Bell Co.	28
Burrows Equipment Co.	33
Columbiana Pump Co.	24
Decatur Pump Co.	23
Deming Co.	14
Dempster Mill Mfg. Co.	24
Duncan Products, Inc.	29
Easy-Heat, Inc.	27
Electromode Div., Comm'l Controls Corp.	8-9
Emerson Electric of St. Louis	31, 33
Everpure Inc.	28
Flint & Walling Mfg. Co.	26
General Electric Co.	Inside Back Cover
Kelvinator Div., American Motors Corp.	6
Monarch Range Co.	24
F. E. Myers & Bro. Co.	Inside Front Cover
Nelson Mfg. Co.	32
Oshkosh Filter & Softener Co.	24
Peerless Equipment Co., Inc.	33
Radiant Electric Heat Co.	15
Red Jacket Mfg. Co.	18
Ritchie Mfg. Co.	31
Sturges Heat Recovery, Inc.	28
System Analyzer Corp.	29
Tait Mfg. Co.	31
Van Dusen & Co.	32
Edwin L. Wiegand Co.	17
Wincharger Corp.	17

If you are unable to get information about the particular equipment you require from our advertisers as listed above, our Reader Service Department will be glad to help you. As a reader of this magazine you are entitled to this information service free of cost.



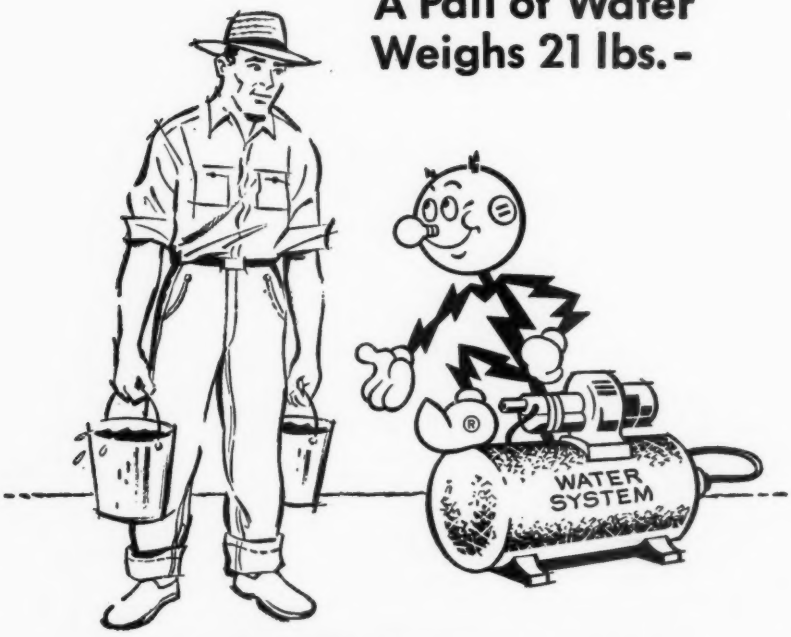
A ROTISSERIE WITH "OPEN AIR" BROILING!

True broiling needs fresh, dry air—not moisture-laden air that "roasts" instead. General Electric's new Rotisserie-Broiler provides a constant flow of cool, fresh air, plus direct infra-red heat. Quickly crisps meats and seafood on the outside, seals in natural juices! Rotisserizes *two* chickens, roast beef or a leg of lamb. Automatic timer and handy timed appliance outlet. Give those hungry farmhands a taste of *true* "open air" broiling! General Electric Co., Portable Appliance Dept., Bridgeport 2, Conn.

Progress Is Our Most Important Product

GENERAL ELECTRIC

A Pail of Water Weighs 21 lbs.-



Let REDDY Lug It!

A growing farm needs an ample supply of running water at the turn of a tap. An old-fashioned pump or an out-of-date water system will slow down production . . . cost you time and hard labor . . . impair the health and safety of your family. With plenty of fresh running water for every need—the whole farm prospers.

Whether you have a shallow or deep well, an electric water system can be installed easily to provide more water everywhere. You don't have to lug heavy pails or pump when the wind lets you down. Can you afford to pump-pump-pump day in and day out, when I can do the job for only a few cents a month?

Your Helping Hand... Reddy Kilowatt

FARM BETTER ELECTRICALLY

Appalachian Power Company

We send you this magazine with the hope that it will show you new ways to enjoy the profits and pleasures of dependable, low-cost electricity.